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Subject: Stanford Linear Accelerator Center 2006 Ten Year Site Plan

Attached is the Stanford Linear Accelerator Center's (SLAC) 2006 TYSP. The plan has been review and found to be consistent with the funding provided in the Office of Science 5-Year Budget Plan and the instructions provided in the SC Ten Year Site Plan Guidance. It encompasses all line item construction, general plant projects and potential third party financed construction. It also identifies direct and indirect funding for infrastructure and maintenance of real property.

The TYSP reflects SLAC plans to submit proposals to DOE-SC for funding the construction of four new general purpose buildings planned for FY2009-FY2011. If DOE-SC funding is not viable, the Laboratory will seek third party financing. These buildings total 102,000 square feet and are estimated to cost $76 million.

An issue of highlight contained in this plan is Deferred Maintenance (DM), which will require continued dialogue with SC-31.2. The infrastructure funding planned in this TYSP should be sufficient to reduce the DM backlog from a forecasted $29.5 million at the end of FY2006 to about $16 million in FY2017. However, the planned maintenance budget for the period results in an MII that remains in the 0.76 to 0.92 range through FY2011, then increases to and remains at about 1.10% through FY2017. This level of MII is largely due to the nearly 900,000 square feet (about one-half of the Laboratory's total space) of high value/low maintenance "unique structures" such as tunnels, other underground structures and heavy concrete experimental buildings. SLAC has commissioned a study to determine the appropriate average annual maintenance to sustain these unique facilities and plans to submit a proposal to DOE-SC in July 2006 that is expected to support a lower annual maintenance budget for those facilities.

A noteworthy addition to this year's plan is an Alternate Investment Plan. In it SLAC has outlined how it plans to upgrade and replace forty year old mechanical and electrical utilities, required to achieve its vision and goals by 2018. This plan consists of a four phase, $85 million project to upgrade the site electrical distribution system and a $25 million project to rehabilitate and modernize the three oldest major office and laboratory buildings on the site.

The 2006 SLAC TYSP has been reviewed by the SSO staff and found to be in conformance with issued guidance. Accordingly, as SSO Site Manager and SC Landlord representative I have approved this plan and submit it for SC Headquarters' review and approval.

for Nancy N. Sanchez
Site Manager
Stanford Site Office

cc: Patricia Dehmer, SC-22
Robin Staffin, SC-25
John Yates, SC-31.2

Under Contract with the Department of Energy (DOE) Contract DE-AC02-76SF00515

STANFORD LINEAR ACCELERATOR CENTER

TEN YEAR SITE PLAN

FY 2008 – FY 2017

June 13, 2006

TEN YEAR SITE PLAN
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I. Executive Summary

This Ten Year Site Plan (TYSP) is the Stanford Linear Accelerator Center's (SLAC) single, comprehensive plan that addresses how the Laboratory's real property assets will support the Department of Energy's (DOE) strategic plan, the Secretary of Energy's five-year planning guidance, and the Office of Science (SC) program direction and guidance. This TYSP links facility and infrastructure planning, budgeting, implementation and evaluation to SLAC missions.

Photon Science is the most rapidly expanding area of research and user activity at SLAC. Photon Science consists of three central and interconnected elements: 1) synchrotron radiation based studies using SPEAR3, 2) x-ray free electron laser development, and 3) research using the Linac Coherent Light Source (LCLS) (which is expected to begin operations in 2009) coupled with four interdisciplinary, science-based initiatives that engage SLAC and Stanford University. In recognition of its evolving mission SLAC reorganized in the last year to focus on its two main areas of science, photon science and particle and particle astrophysics.

Site development at SLAC is driven by the scientific missions under the Office of Science programs in Basic Energy Sciences (BES), High Energy Physics (HEP), Biological and Environmental Research (BER), and Advanced Scientific Computing Research (ASCR). With the B Factory experimental operations expected to complete in 2008 and LCLS becoming the primary experiment served by the Linac in 2009, BES began partial funding of the Linac in FY2006 for the LCLS project. Transition of Linac operations from HEP to BES will occur incrementally until BES supports all Linac operations in FY2009.

The data provided in this TYSP is consistent with the funding provided in the Office of Science 5-Year Budget Plan and the instructions provided in the SC Ten Year Site Plan Guidance. The plan encompasses all line item construction, general plant projects and potential third party financed construction. It also identifies direct and indirect funding for infrastructure and maintenance of real property.

SLAC plans to submit proposals to DOE-SC to fund the construction of four new general purpose buildings that are included in this plan for FY2009-FY2011 as "third party financed." If DOE-SC funding is not viable, the Laboratory will seek third party financing. These buildings total 102,000 square feet and are estimated to cost $76 million.

SLAC has analyzed its real property for condition, function, mission impact, safety, environmental protection, and property preservation to determine an acceptable funding level for sustainment and modernization. The infrastructure funding planned in this TYSP should be sufficient to reduce the deferred maintenance backlog from a forecasted $29.5 million at the end of FY2006 to about $16 million in FY2017. However, the planned maintenance budget for the period results in an MII that remains in the 0.76 to 0.92 range through FY2011, then increases to and remains at about 1.10% through FY2017. This apparently low MII is largely due to the nearly 900,000 square feet (about one-half of the Laboratory's total space) of high value/low maintenance "unique structures" such as tunnels, other underground structures and heavy concrete experimental buildings. SLAC has commissioned a study to determine the appropriate average annual maintenance needed to sustain these unique facilities and plans to submit a proposal to DOE-SC in July 2006 that is expected to support a lower annual maintenance budget for those facilities.

An Alternate Investment Plan has been included to enable SLAC to achieve its vision and goals by 2018. This plan consists of a four phase, $85 million project to upgrade the site electrical distribution system, particularly the section that serves the Klystron Gallery and Linac, and a $25

million project to rehabilitate and modernize the three oldest major office and laboratory buildings (Administration and Engineering Building, Central Laboratory and Central Laboratory Addition) on the site.

SLAC's primary infrastructure challenges include maintaining old facilities, upgrading and replacing forty year old mechanical and electrical utilities, and constructing new buildings to meet the evolving mission of the Laboratory. These challenges and the strategies for meeting them are discussed in this plan. If the funding identified in the plan is forthcoming, mission needs will continue to be met.

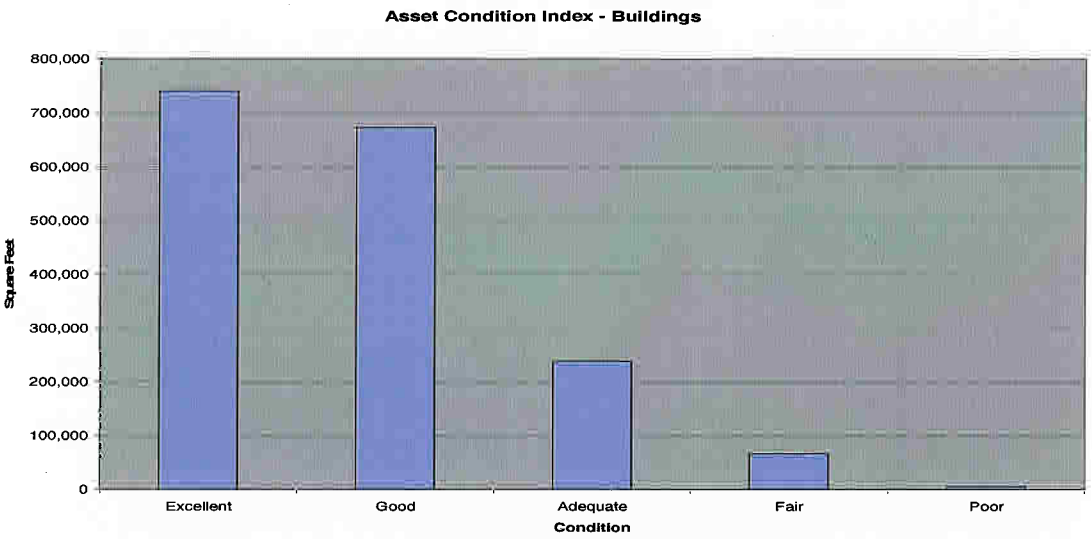
II. Overview of Site F&I

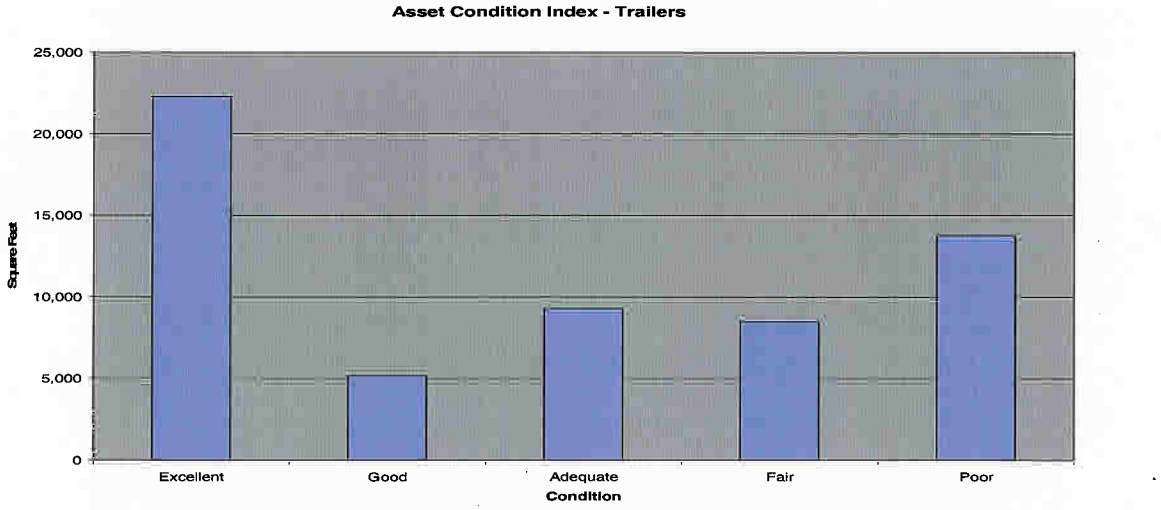
The Stanford Linear Accelerator Center is a Department of Energy user facility that serves as a national resource in basic science, research and engineering. SLAC is managed and operated by Stanford University, and is located near the foothills on the San Francisco Peninsula about three miles west of the University campus in an unincorporated portion of San Mateo County. The site occupies 426 acres of land owned by Stanford University that was leased in 1962 to the Atomic Energy Commission, through the year 2012 at no fee. This plan assumes that a new long term lease will be negotiated by DOE and Stanford University.

Operations began in 1966 with the two-mile long accelerator directing electrons into stationary targets in experimental halls End Station A and End Station B. In 1972 SPEAR, then the world's most powerful electron-positron colliding beam device, began operations. In 1980 a new electron-positron beam machine called PEP, a storage ring about 800 meters in diameter operating off the Linac, began operations. The SLAC Linear Collider (SLC), an electron-positron collider slightly larger in size than PEP that also operated off the Linac, was completed in 1989. PEP-II, an upgrade of the original PEP machine, was completed in 1998 and provides beam to the BaBar detector. The Stanford Synchrotron Radiation Laboratory (SSRL) was established as an independent laboratory in 1973 and until 1990, shared SPEAR with the high energy physics program at SLAC. SPEAR became a fully dedicated light source in 1990, and SSRL became a division of SLAC in 1992. The original SPEAR ring was upgraded to operate as a third generation light source, SPEAR 3, in 2004. In summer 2006 construction (ground breaking) will begin on the Linac Coherent Light Source (LCLS).

SLAC's physical plant consists of 112 buildings and structures and 34 real property trailers totaling nearly 1.8 million square feet, as well as site utilities and roadways. Total replacement plant value (RPV) is recorded as $905 million in FIMS. The "actual" MII for FY2005 was 0.81% and the actual for FY2006 is forecasted to be 0.92% in accordance with the Mid-Year Update. (Once the VFA RPV report is completed, SLAC will submit a proposal to DOE-SC that is expected to significantly lower the Laboratory's RPV and thereby increase its MII. See Section IV.G "Maintenance" for more details.) The physical plant includes many tunnels and other unique experimental facilities, the largest of which are the two-mile long Klystron Gallery (356,000 square feet) that houses support equipment for the linear accelerator and the Linac accelerator housing (115,000 square feet). The asset utilization index for buildings and trailers is 0.999. Except for the newly constructed Kavli Building and the on-site Guest House owned by Stanford University, all SLAC facilities are owned by DOE. The data in this TYSP does not include the two non-DOE buildings. SLAC has no excess facilities.

The buildings are in good condition with an average asset condition index (ACI) of 0.98 (nearly excellent). The trailers are in adequate condition with an average ACI of 0.93.



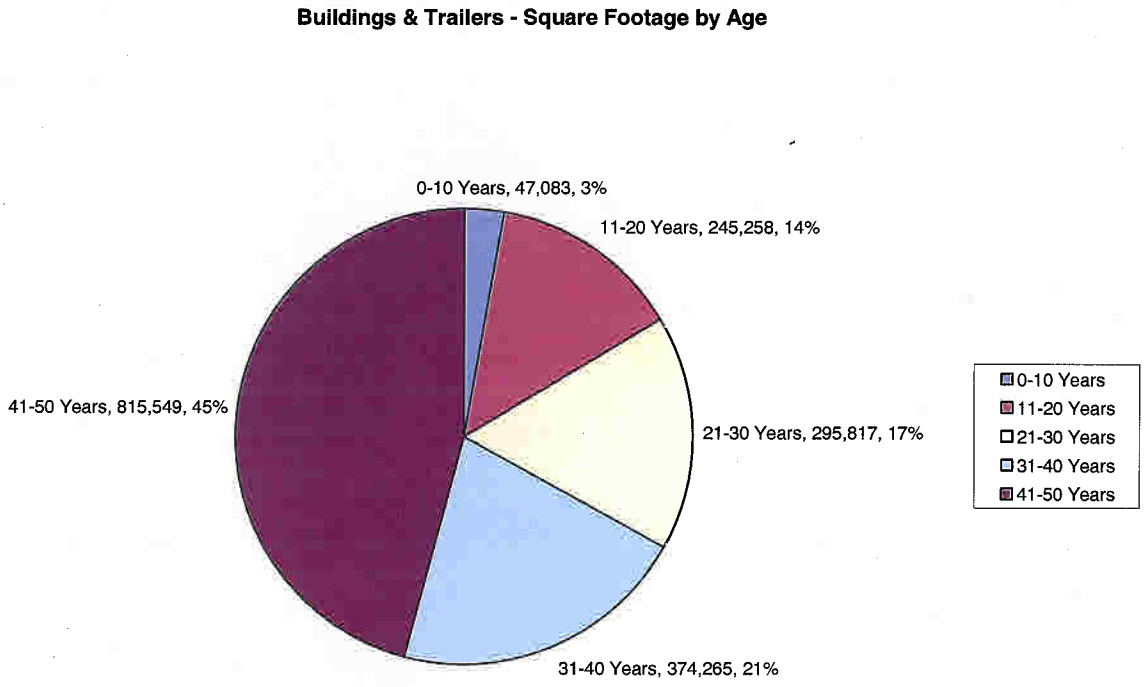


An aerial view of the SLAC site is provided in Appendix I. An electronic link for the site plan is listed in Appendix 2 and electronic links for the various utility drawings are listed in Appendix 3.

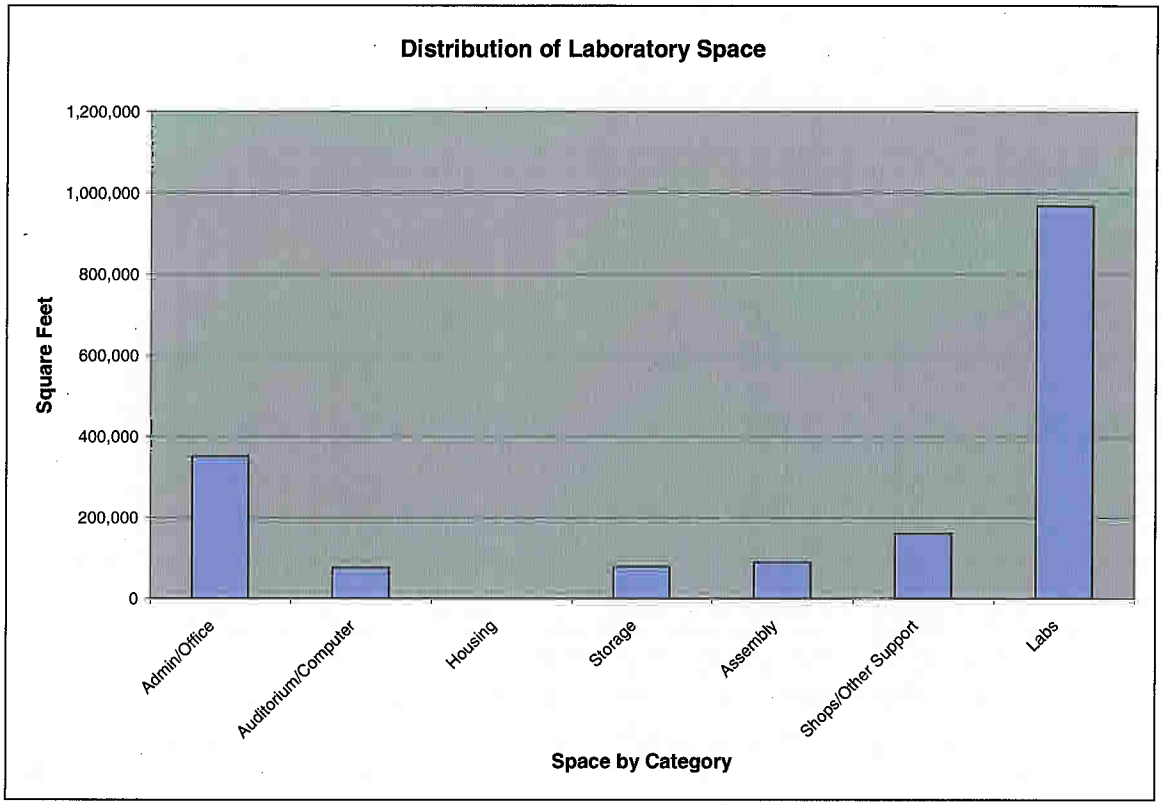
The current full and part-time staff is approximately 1,600. Approximately 3000 students, postdoctoral researchers, and scientists from the U.S. and abroad make use of SLAC's accelerator-based instrumentation and techniques for their research in photon science, particle physics and particle astrophysics. The estimated average daily site population is about 2,400, including staff, subcontractors, users and visitors.

SLAC's total budget in FY2006 is $315 million, which includes $90 million for two line item construction projects.

Most of the Laboratory's infrastructure dates back to the original construction between 1962 and 1966. The following graph illustrates that 83% of the Laboratory's building space is over 20 years old, and 45% is over 40 years old.



The following chart illustrates the distribution of SLAC space, by GSA Use Code.



III. Current and Future Missions for the Site

A. Mission

SLAC's mission is to make discoveries in cutting-edge areas of photon science and particle and particle astrophysics, to effectively operate a safe laboratory for a national and international research user community, and to employ and train exceptionally talented scientists, engineers and the professionals that support this mission.

The Laboratory's primary mission focus is on designing, constructing, and operating state-of-the-art electron accelerators and related experimental facilities for use in synchrotron radiation and high energy physics research. Major user facilities at SLAC include the Stanford Positron Electron Accelerator Ring (SPEAR), a synchrotron light source providing a resource for probing the structure of matter at the atomic and molecular scale, and the B Factory, a high energy electron-positron collider. The B Factory makes use of the two mile long linear accelerator, or Linac, on the SLAC site. SLAC is also the planned site for the Linac Coherent Light Source (LCLS), the world's first x-ray free-electron laser which will utilize the last third of the Linac.

B. Transition

SLAC reorganized within the last year to better support its two main areas of scientific focus – photon science and particle and particle astrophysics. SLAC has been funded primarily by DOE High Energy Physics. Recently however, the field of photon science has

grown dramatically. Photon science will become the predominant research program at SLAC when the B Factory experiment ends operations in 2008 and operations at LCLS commence in 2009. With LCLS and SPEAR3, SLAC will have a suite of accelerator-based x-ray light sources for photon science research that will lead the world in exploring the behavior of the ultra-fast and the ultra-small. The high energy physics program will evolve from a major on-site facility to the development and utilization of off-site high energy physics accelerators, and will include major growth in non-accelerator particle and particle astrophysics.

The major research activities planned at the Laboratory for the next decade, and their expected impact on facilities, are as follows.

1. Major Research Activities

- Foundation: the Ongoing Program
  Enhance and maintain the necessary capabilities to support the growing and evolving needs of the Stanford Synchrotron Radiation Laboratory through operation of state-of-the-art facilities including the SPEAR3 synchrotron light source, the B Factory (until end of operations in 2008) and the Large Area Telescope/Gamma-Ray Large Area Space Telescope (LAT/GLAST). GLAST, a space-based detector, will begin its operation phase after the launch in 2007.

- Linac Coherent Light Source (LCLS)
  LCLS, a new BES initiative, will be the world's first x-ray free electron laser. It will provide unique photon beams for research exploring previously inaccessible realms of structural dynamics in the chemical, biological and material sciences, as well as new applications in nanoscale phenomenology and atomic and plasma physics.

  LCLS is planning to begin conventional construction in summer 2006 and is scheduled to become operational in 2009. The science program of LCLS is expected to grow significantly and in recognition of this, the initial construction has been designed to accommodate substantial performance enhancements, and a second undulator with additional experimental stations without significant reconstruction of conventional facilities. The infrastructure will readily accommodate future LCLS expansion of additional beam lines proposed in the horizon of this TYSP.

  The last one-third of the Linac will generate the electron beams that are transported across the Research Yard (in a new above-ground structure) into a tunnel. Experiments will be done in two new underground experimental halls along the tunnel. A new Central Lab Office Complex will be built above the tunnel to support the LCLS science and will be the beginning of a new campus area which will support future growth and new initiatives in photon science. The proposed upgrades to LCLS in 2010–2020 will require the entire Linac to supply the electron beams.

  The initial phase of LCLS will include an office complex and beam line tunnels, experimental halls, and service buildings for a total building area addition of 167,500 square feet. The proposed expansions in 2010–2020 will add an additional 105,000 square feet of conventional construction.

- Photon Science Initiatives
  Photon Science will seek new interdisciplinary initiatives with Stanford University on research in areas that cut across the physical, biomedical, engineering and computational sciences. In addition to the recently established Photon Ultrafast Laser Science and Engineering Center (PULSE), growth will also involve the X-Ray Laboratory for Advanced Materials Science, the Structural Biology Initiative and the Environmental Molecular Sciences program. To support these new initiatives, a 35,000 square foot Photon Science Building and 20,000 square foot building for the X-Ray Laboratory for Advanced Materials Science are planned.

  In support of LCLS, the LCLS Ultrafast Science Instruments (LUSI) project is building a suite of x-ray instruments for exploiting the unique scientific capability of LCLS. LUSI hopes to receive major funding starting in 2007, and to build four instruments over a period of about five years.

- International Linear Collider (ILC)
  Although the ILC is far too large to be built on the SLAC site, the Laboratory will be significantly involved in the design of the ILC machine and its detectors, and the testing of its subsystems.

  SLAC ILC staff currently resides for the most part in modular buildings and trailers that are seismically deficient and nearing the end of their economic life. Because the program is expected to grow, a Central Office Building of 25,000 square feet is being proposed to house the ILC staff and staff in other programs who reside in similar type modular buildings and trailers.

- New Initiatives in Particle Astrophysics and Neutrino Physics
  GLAST, SLAC's first major venture into particle astrophysics, has led to the founding of the Kavli Institute for Particle Astrophysics and Cosmology (KIPAC), a joint institute of Stanford University and SLAC. Other projects such as the Large Synoptic Survey Telescope (LSST), a land-based telescope whose primary purpose is to determine the properties of dark energy and dark matter, are currently in the R&D phase. Other new initiatives are anticipated towards the end of this decade that will lead to the next generation of cosmological studies. The Kavli Institute is housed on Stanford campus and in the new third party (Stanford University) financed Kavli Building which opened in March 2006.

  There is the R&D effort, which could lead to a full-scale experiment to measure neutrinoless double beta decays through the Enriched Xenon Observatory (EXO). The Enriched Xenon Observatory is an underground detector that will search for a rare type of nuclear decay that will lead to a fuller understanding of the neutrino. A 200 kg prototype of the EXO experiment will begin operations in 2007.

- Accelerator R&D and Supporting Technologies
  Accelerator R&D and R&D in scientific computing have paid off handsomely in the past and will be continued with initiatives that cross-cut to both photon science and particle science. SLAC will propose to replace the Final Focus Test Beam (recently dismantled for the construction of the LCLS) with a new 30 GeV facility, SABER, capable of delivering high quality, high energy, short pulse electron beams to the user community for advanced accelerator investigations. SABER, which will be a

modification of the Linac and South Arc region of the Stanford Linear Collider (SLC), which has been in operational standby, does not involve any conventional construction.

In the computing area SLAC would like to further develop its core competency in the "science of scientific computing" in support of experimental detector and accelerator simulation and in "computing for data intensive science" specializing in huge memory systems for data analysis and scalable data management initially driven by the B Factory's science program. An additional computer building will be needed for this enterprise.

2. Impact on Existing Facilities

The end of B Factory operations will put the PEP-II tunnel into operational standby status for possible future use. The IR-2 (BaBar) experimental hall and support buildings are expected to be put to use for other purposes – storage and assembly space in support of other ongoing programs. PEP-II support staff and supporting lab and shop space will be redeployed to support the operations of the Linac and LCLS or the other future programs. The front two-thirds of the Linac will be supported for continued use for generating electron beams to End Station A and SABER. Eventually it will be needed for upgrades in support of LCLS in 2010-2020.

C. Funding Sources

SLAC will continue to be primarily funded by the DOE Office of Science (SC) (BES, HEP, BER, ASCR, SLI, S&S). As the PEP-II/BaBar experimental operations are expected to complete in 2008 and the LCLS operations are scheduled to begin in 2009, a multi-year transition of the programmatic ownership for SLAC Linac operations from HEP to BES has begun. BES will become the dominant program providing funding to SLAC.

However, it is important to address funding from non-DOE sources. The current SLAC non-DOE funded activities are primarily sponsored by NASA, NIH, private foundation, and collaborative partners. All of the activities complement the DOE support of the research programs and/or the operation of experimental facilities at SLAC, and are well-aligned with the SLAC mission. NASA provides funding, together with DOE and an international collaboration, for the fabrication of the Large Area Telescope (LAT), of the NASA Gamma-Ray Large Area Space Telescope (GLAST) mission, and for particle astrophysics research. The NIH funding is in support of the macromolecular crystallography program within the SSRL Structural Molecular Biology program. The Moore Foundation funding through the California Institute of Technology provides for the fabrication of a new SPEAR3 beam line for macromolecular crystallography and a KECK foundation grant funds research in the area of ultrafast X-ray science. SLAC's collaborative partners, in the U.S. and from abroad, provide support to the fabrication and operation of experimental facilities for photon science and particle science research.

Through its strong connection with Stanford, SLAC has been able to obtain funding for the SLAC Guest House, the Kavli Building and the construction of a Molecular Observatory for Structural Molecular Biology (from the Moore Foundation) at SPEAR3. Third party funding will continue to be sought for other select facilities when DOE funding is not available. Potential donors to Stanford University have expressed interest in contributing to the construction of research facilities which are synergistic to the DOE programs. Potential third party financed projects are summarized in Section IV.N.

Below is a summary table showing projected program funding (excluding construction) and staffing.

Summary of Expected Program Funding (excluding line-item construction projects) and Laboratory Staffing:

Funding (excluding line-item const.):	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY 15	FY 16	FY 17
Total $(000,000):	237.9	291.4	311.5	367.5	401.5	417.5	432.1	447.2	462.9	479.1	495.8	513.2
Total Staffing: (FTE's)	1600	1650	1675	1700	1725	1740	1740	1740	1740	1740	1740	1740

D. Staffing and User Levels

Staffing, currently about 1,600, is expected to increase over the planning period, particularly in the areas associated with the LCLS and SPEAR3 programs. Two new beam lines are currently under construction at SPEAR3, which when operable will give the light source twenty-nine beam lines. SPEAR3 has the capability to easily add another twenty-nine beam lines for a total of fifty-eight. LCLS will come on-line in 2009, and expansions proposed to LCLS during the period of this TYSP include a second undulator and several additional undulator beam lines in three additional tunnels. The extraordinary LCLS beams will lead to new research opportunities in the chemical, biological and materials sciences as well as new applications in allied fields. The proposed Photon Science Building and other proposed facilities listed under Section IV.N "Third Party / Non-Federal Funded Construction of New Buildings" will support the growth of both staff and users. As a rough estimate, staffing of the Laboratory may increase by as much as 20% by FY2015. Total user population is expected to grow from the current 3,000 as well, although the increases associated with the synchrotron radiation science programs will be somewhat offset by the expected conclusion of the B-Factory experimental operations.

The user community is expected to rise with LCLS, possibly creating the need for an addition to the Guest House by FY2014.

E. Budgeted or Planned Research Program Funded Projects

Following are summary descriptions of budgeted or planned research program funded Line Item Construction Projects. Budget and schedule detail is shown in Appendix 4 "FY08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission."

Linac Coherent Light Source (BES)

The total estimated cost (TEC) of this project is $315 million, which includes $36 million for project engineering and design and $279 million for construction.

The Linac Coherent Light Source (LCLS) will be the world's first x-ray free electron laser. LCLS is currently in the detailed project engineering and design phase, with long-lead procurements scheduled for FY2005, construction beginning near the end of FY2006 and operations commencing in 2009.

A new injector will be built to inject electrons into the final kilometer of the three kilometer Linac to accelerate electrons into the new LCLS facility. Minor modifications will be made to the Linac to serve the LCLS. Two new experimental buildings, the Near Hall and the Far Hall connected by a beam line tunnel, will be constructed. A 74,100 square foot Central Laboratory Office Building is planned to provide laboratory and office space for LCLS users and to serve as a center for basic research in x-ray physics and ultra-fast science.

The beam line tunnels, experimental halls, and service buildings add another 93,400 square feet for a total building area addition of 167,500 square feet. The new construction will be located in the Research Yard and the experimental area east of the Research Yard.

Construction of the LCLS facilities required a waiver of DOE requirements for eliminating excess space at SLAC before any new facilities could be built. SLAC did not have enough excess space to meet the one-for-one offset requirement. The Director, Office of Science, applied excess space at other DOE sites to meet this offset, and the Secretary of Energy granted a waiver to SLAC, dated March 24, 2005.

Summary of Site Impacts

GSF Added: 167,500
GSF Demolished: 6,008
Space Bank: Offsetting space available with the Secretary of Energy space waiver
Completion Date: 2009
RPV (conventional facilities): $47.2 million
Increase in Site Maintenance Funding: To be determined
Staff Increase: 230 in FY2009
Support: Existing site support (office space, cafeteria, craft support shops) adequate
Utilities: Existing site utilities adequate
Traffic & Parking: Existing roads adequate. Additional parking to be provided

LCLS 2nd Undulator (Technical System Only) (BES) (for information only, does not add space)

The TEC of this expansion is estimated at $150-$210 million.

The initial LCLS project was designed and constructed to accommodate two parallel undulator systems within a single undulator tunnel. The second undulator system allows the LCLS to build upon the initial LCLS investment and deliver a second FEL, providing additional scientific opportunities possibly at an even shorter wavelength. The second undulator system is foreseen to be constructed, installed and available for research in FY2013.

Summary of Site Impacts

GSF Added: None
GSF Demolished: None
Space Bank: Not applicable
Completion Date: 2013
RPV (conventional facilities): None - programmatic facilities only
Increase in Site Maintenance Funding: None – programmatic facilities only
Staff Increase: 75 in FY2013

Support: Existing site support (office space, cafeteria, craft support shops) adequate
Utilities: Existing site utilities adequate
Traffic & Parking: Existing roads adequate, parking needs undetermined at this time

LCLS Future FELs (Technical Systems and Conventional Facilities) (BES)

This expansion project has a TEC of about $1.2 billion for full implementation of six undulators. If fully funded, completion could be expected by FY2017.

To support the anticipated long-term growth of the LCLS science program, the current LCLS machine design allows for additional undulator beam lines to be accommodated in three additional tunnels, two to the south and one to the north of the original tunnel. Each tunnel is currently estimated to be 14 feet wide and 2,500 feet long. The expansion of the LCLS can be phased.

Summary of Site Impacts

GSF Added: 105,000
GSF Demolished: None
Space Bank: Unknown at this time
Completion Date: 2017
RPV (conventional facilities): Unknown at this time
Increase in Site Maintenance Funding: Unknown at this time
Staff Increase: Unknown at this time
Support: Unknown at this time
Utilities: Unknown at this time
Traffic & Parking: Unknown at this time

IV. Facilities and Infrastructure (F&I)

A. Vision, Goals, and Strategy (VGS)

1. Vision

- SLAC's major facilities and infrastructure are repaired, renovated, and upgraded, and facilities and infrastructure are in place to effectively and efficiently support its expected research mission well into the 21st century.
  - Facilities and infrastructure are efficient to operate and maintain.
  - The maintenance backlog is maintained at an acceptable level.
- SLAC's office and laboratory facilities make it the "workplace of choice" for employees and research users that help attract and retain high quality staff.
- The latest advances in information technology are available to enhance worker productivity.
- Users have access to quality research support facilities and convenient and reasonable accommodations.
- The Laboratory's facilities and infrastructure provide a safe and healthy working environment for employees, users and visitors.
- The Laboratory continues to be viewed as a good neighbor to the community.

2. Goals

In support of this vision, SLAC will work toward the following goals:

a. Have no increase in DM as validated by an ACI > 0.95.
b. Replace the aged, undersized and deteriorated underground mechanical utilities and complete the building seismic strengthening program.
c. Replace the aged and obsolete high voltage electrical distribution equipment serving the Klystron Gallery and Linac with modern equipment.
d. Replace the aged, deteriorating building roofs and HVAC air handling units.
e. Address the various ground slumping issues around the site.
f. Renovate the major buildings to modern standards.
g. Construct the Photon Science Building and the X-Ray Laboratory for Advanced Materials Science (XLAM) to support new initiatives with Stanford University in Photon Science.
h. Construct the Computer Building Annex to house the needed computing services to support the increased research in advanced computing.
i. Construct the Central Office Building.
j. Maintain an asset utilization index in the excellent range of 1.00 – 0.98.
k. Complete site environmental cleanup requirements set forth by order of the California Regional Water Quality Control Board.

3. Strategy

The following strategy (numbered to correspond with the respective goals) will be followed to achieve the above goals:

a.1. Recalculate and determine "adjusted" RPVs for high value/low maintenance facilities.
a.2. Recalculate the RPVs and perform third-party condition assessments for the OSFs.
a.3. Continue to increase the annual maintenance investment while maintaining a balance between the needs of the infrastructure and the science program.

b.1. Execute the Safety & Operational Reliability Improvements Project (SORIP) upon construction approval by DOE.
b.2. Use GPP funding to complete the renovation of the underground mechanical utilities and the seismic upgrades not in the scope of SORIP.

c.1. Work with DOE to gain approval for four line item projects to replace the obsolete and aged high voltage electrical distribution equipment.
c.2. If funding for the line item projects is not forthcoming in a timely manner, GPP funding will be used, on a priority basis with other infrastructure projects, to replace the most critical electrical equipment in the interim.

d.1 Use operating funding or indirect overhead funding as applicable, on a priority basis with other infrastructure projects, to replace the deteriorated roofs and HVAC air handling units.

e.1 Use GPP funds, on a priority basis with other infrastructure projects, to stabilize the areas subject to ground slumping.

f.1 Work with DOE to gain approval for the line item project to rehabilitate the Administrative and Engineering Building, Central lab and Central Lab Addition.
f.2 If the line item project is not approved, use GPP, operating funding or indirect overhead funding as applicable, on a priority basis with other infrastructure projects, to renovate buildings to modern standards.

g.1. Work with BES to obtain funding for the Photon Science Building and the X-Ray Laboratory for Advanced Materials Science (XLAM).
g.2. If DOE is unable to fund the buildings, seek third party financing.

h.1. Work with DOE-SC to obtain funding for the Computer Building Annex.
h.2. If DOE is unable to fund the building, seek third party financing.

i.1. Work with DOE-SC of Science to obtain funding for the Central Office Building.
i.2. If DOE-SC is unable to fund the building, seek third party financing.

j.1. Continue to adapt, through recapitalization if necessary, existing facilities to new uses as needed by changing missions.

k.1. Investigate to identify the areas requiring remediation, evaluate alternative approaches and work with DOE-SC to fund the activities.

4. Facility and Infrastructure Issues

In order to implement the strategies and meet the goals listed in IV.A.2 above, the following key facility and infrastructure issues must be addressed.

a. Maintenance Funding and MII

For several years prior to FY2005 the maintenance budget remained at a constant dollar level due to flat operating budgets (declining in terms of purchasing power). In FY2005 actual maintenance costs increased by $2,039K to $6,916K or 42% over the FY2004 level of $4,877K. This resulted in an MII increase from 0.57% to 0.81%. The Laboratory plans a general increase in its maintenance funding over the FY2007 – FY2012 period as shown in the FY2008 IFI Crosscut Budget (Appendix 4). The plan for maintenance funding in the FY2008 IFI does not meet the SC goal of 2% of RPV. SLAC is developing sustainment models for its high value, low maintenance heavy concrete experimental buildings and tunnels to determine the annual maintenance funding needed to assure long term availability for mission activities. It is expected that the annual required maintenance investment level will be substantially less than the 2% SC guideline for maintenance investment. See Section IV.G for more information.

b. Aged High Voltage Electrical Distribution System

Most of the high voltage distribution equipment serving the Klystron Gallery as well as a few other site substations will need replacement over the next ten plus years. DOE-SC has currently planned an SLI line item project for $21 million, funded for FY2015 and FY2016. SLAC has proposed in its Alternate Site Plan (Section IV.K) an $85 million Electrical Distribution Upgrade project, with funding to be provided in four phases of approximately $20 million per phase beginning in FY2008 and extending through FY2018.

c. Facilities to Support the Changing Research Mission

SLAC has an expanded, science-driven program planned for the future that is dependent upon the availability of appropriated funds and programmatic decisions by DOE-SC. The Laboratory intends to position itself to take advantage of any opportunities that may be available through the American Competitiveness Initiative. In addition, SLAC and Stanford University are exploring new initiatives that are well-aligned with the SLAC mission and its science oriented business lines which leverage SLAC's existing facilities and staff. This TYSP anticipates this collaboration by including some new buildings in Section IV.N "Leasing & Third Party / Non-Federal Funded Construction of New Buildings" that may be constructed with third party funding if DOE-SC is unable to fund them.

5. Cross-Program Issues - EM Facilities

The primary environmental management issue at SLAC is control and remediation of legacy materials in soil or groundwater. In May 2005, the California Regional Water Quality Control Board, San Francisco Bay Region, issued Order R2-2005-0022 for the investigation and remediation of impacted soil and groundwater at SLAC.

Since the early 1990s, the DOE Office of Environmental Management (EM) has funded the investigation and remediation of soil and groundwater at SLAC. The primary soil concerns are polychlorinated biphenyls (PCBs) and lead. The EM program has completed a number of soil remediations over the last 12 years, and is scheduled to complete additional work. The primary chemicals of concern in limited areas of groundwater at SLAC are chlorinated solvents. One groundwater remediation system has been in operation since 2001, one was recently constructed in 2005-2006, and one more is planned to be installed in the next several years. In addition, a monitoring network and database have been established to monitor chemical movement in groundwater.

EM is currently working with SC on plans to transfer the responsibility for "Long-Term Response and Stewardship" activities at SLAC, possibly beginning in 2009. The remediation activities no longer funded by EM would include at least the operation and maintenance (O&M) of the groundwater containment and treatment system at the Former Solvent Underground Storage Tank Area (FSUST), and the O&M of two dual-phase extraction and treatment systems, one located at the Former Hazardous Waste Storage Area (FHWSA) and one to be located at the Plating Shop (PS) Area. EM and SC are negotiating transfer agreements, including program responsibilities.

There are additional SLAC sites identified as requiring environmental investigation and cleanup which EM and SC are negotiating responsibility for. In FY2004, an Independent Review Team (IRT) was convened to determine the appropriate scope and schedule for this remaining cleanup work. The IRT report recommended a split in responsibility between SC

and EM. The IRT viewed PCB impacts to storm water as an operational issue and therefore should be an SC responsibility. EM would however be responsible for remediating PCB source areas.

To complete additional work scope, EM completed two baseline change proposals in 2005 to obtain the extra funding to support the EM activities, based on an estimated EM completion of FY2009, although EM will fund the majority of FY2010 Long-Term Response and Stewardship activities. A third baseline change proposal is anticipated at the CD-2 and Performance Baseline. The costs and work schedule will be re-evaluated during completion of the Performance Baseline. Based on the currently approved funding profile, SLAC currently expects to receive EM funding of $3.5 million in FY2006, $5.7 million in FY2007, $5.6 million in FY2008, and $4.7 million in FY2009. EM has also requested $1.5 million to cover one year of operations and maintenance costs for the groundwater treatment systems. The $1.5 million would be transferred to SC in FY2010 to fund former EM activities (e.g., operations and maintenance of treatment systems). As mentioned above, the funding profile may change based on the CD-2 and completion of the Baseline.

B. Process for Identifying F&I Needs and Development of Plans to Meet the VGS

The Conventional and Experimental Facilities Department (CEF) prepares a Five Year Plan that identifies the major infrastructure projects projected for the period. Projects are identified by technical experts within CEF. This plan is prepared without regard to availability of funding or resources to accomplish the projects. The projects are prioritized by a group consisting of technical experts, CEF management and CEF ES&H coordinators. From this list CEF submits those projects it wants to be considered for funding to Operations Planning, the department within the Operations Directorate that has responsibility to prepare, maintain, track and report on the infrastructure projects and budget. Projects with an ES&H component are submitted directly to the RPM (Risk Priority Model) Committee which is comprised of ten representatives from various segments of the Laboratory who have interest and knowledge of environment, safety and health matters. The RPM Committee rates these projects in accordance with an ES&H Risk-based Priority Model and submits the rankings to the ES&H Coordinating Council (ES&HCC) which is comprised of the Laboratory Director as chair, the two Deputy Directors, Director of Operations, Director of LCLS Construction, Associate Director of ES&H and five others in upper management. The ES&HCC selects the specific projects from the RPM list for funding and forwards to Operations Planning for inclusion in the fiscal year's approved project list. Other groups can submit projects to Technical Planning and RPM Committee for consideration.

Operations Planning prepares a project list, consisting of projects submitted by CEF (which are distributed over a five year period), projects from the ES&H RPM Committee and recommended by the ES&HCC, and other proposed projects to the SLAC Infrastructure Committee. The SLAC Infrastructure Committee has the task of recommending the projects to be funded in FY2006. The Infrastructure Committee is comprised of representatives from each Directorate and includes the Chief Operating Officer, Chief Financial Officer and the CEF Department Head. The Infrastructure Committee makes its project recommendations to the Lab Director within the funding limits afforded by the Laboratory FY2006 budget plan. This project list is the infrastructure "Operating Plan" for FY2006. This list is the basis for the GPP and maintenance projects in the annual Integrated Facilities and Infrastructure Budget submittal and the TYSP.

Line item projects for new buildings are proposed to the Directorate by individual directorates (Photon Science, Particle and Particle Astrophysics or Operations) based upon mission need. Infrastructure line item projects are proposed to the Directorate by CEF. Directorate-approved projects are included in the annual Integrated Facilities and Infrastructure Budget submittal and the TYSP.

Maintenance funding for preventive and repair work (non-project) is derived from past history and the deferred maintenance list, and must be within the Laboratory FY2006 budget plan.

The environmental remediation projects are scoped to comply with California Regional Water Quality Control Board orders and other local regulations.

C. Land Use Plans

SLAC updated its master land use plan, Stanford Linear Accelerator Center Long Range Development Plan (LRDP), in June 2003. This Ten Year Site Plan is generally consistent with these long range plans.

The LRDP includes a 10-Year Plan that identifies facilities needed to support near term mission objectives, and a 20+ Year Plan that creates a framework for long term growth. The plan also preserves the buffer zones at SLAC boundaries that are important to the community at large, and encourages redevelopment and infill which minimizes expansion into undeveloped areas in order to minimize environmental impact. The LRDP employs strategies to make room for growth: redevelopment of low-density areas at higher density, expansion and intensification of existing facilities, and careful consideration of expansion into undeveloped areas. The logic of well-planned development will make room for research program expansion and the human support systems (offices, parking, food service, short-term lodging, and computer facilities) necessary to serve those programs.

A major land use challenge is removal of recyclable scrap metal, which continues to accumulate as a result of DOE's suspension of recycling of surveyed and cleared metals from Radiological Areas. This requires considerable storage space and incurs considerable expense. SLAC costs are increasing as new storage locations are required and additional storage containers are acquired to protect these metals from the environment. The alternative to storage is even more costly low-level radioactive waste disposal, even though these materials have passed required screening criteria for no detectable radioactive contamination.

SLAC's LRDP serves as a working document and a guide for future development. The plan will be updated as necessary to meet the needs and goals of the Laboratory and its stakeholders. The URL for SLAC's LRDP is:
http://www-group.slac.stanford.edu/bsd/SLAC_LRDP_final.pdf.

D. Excess Real Property

SLAC has no excess real property.

E. Long Term Stewardship

Based on the current programmatic assumptions, no buildings or structures are expected to be excessed during the planning period through 2017. However, there are contaminated facilities

as identified in SLAC's Active Facilities Data Collection System (AFDCS) that would require remediation.

The SLC Arcs have been on "Operational Standby" since 1998 but, similar to the PEP Ring before PEP-II, are expected to be utilized in the future. SABER, the proposed replacement for the Final Focus Test Beam, will be located in the South Arc region of the SLC. The PEP-II Ring will be placed on Operational Standby after the B Factory ends operations in 2008.

F. Replacement Plant Value (RPV) Estimates

The estimated RPV for SLAC's buildings, trailers and OSFs in FIMS, based upon the "end of FY2005" value of $904,804,001 (to be used for FY2006), including the new conventional facilities and SLI improvement projects and escalated annually at 2.3% per year, is shown in the following table. RPVs for those buildings in Section IV.N "Third Party / Non-Federal Funded Construction of New Buildings" are not included.

RPV Estimates for the Planning Period

	RPV of Existing Facilities	Additions/Subtractions by Project	Revised RPV
FY 06	$904,804,001		$904,804,001
FY 07	$925,614,493		$925,614,493
FY 08	$946,903,626		$946,903,626
FY 09	$968,682,410	SORI - $7.5M (seismic), LCLS conventional - $47,164,759	$1,023,347,169
FY 10	$1,046,884,154	Radiological Calibration Facility - $300,000	$1,047,184,154
FY 11	$1,071,269,389		$1,071,269,389
FY 12	$1,113,708,785		$1,095,908,585
FY 13	$1,139,324,087		$1,121,114,483
FY 14	$1,165,528,541		$1,146,900,116
FY 15	$1,192,335,698		$1,173,278,818
FY 16	$1,219,759,419		$1,200,264,231
FY 17	$1,247,813,885	LCLS Future FELs - $165 million	$1,392,870,308

G. Maintenance

The planned maintenance budget is as follows.

SLAC's Planned Maintenance Costs

	SC Goal (2% of RPV)	Site Plan (excluding SC DMR Plan Funds)	Site Plan (including SC DMR Plan Funds)	MII (1)	Explanation
FY 06	$18,096,080	$8,300,000 (2)	$8,300,000	0.92%	See note (4) below.
FY 07	$18,512,290	$7,105,000 (3)	$7,897,000	0.77%	See note (4) below.
FY 08	$18,938,073	$7,653,000 (3)	$9,093,000	0.81%	See note (4) below.
FY 09	$20,466,943	$8,832,000 (3)	$10,932,000	0.86%	See note (4) below.
FY 10	$20,943,683	$7,919,000 (3)	$10,679,000	0.76%	See note (4) below.
FY 11	$21,773,388	$9,725,000 (3)	$12,485,000	0.91%	See note (4) below.
FY 12	$22,274,176	$12,112,000	$12,112,000	1.11%	See note (4) below.
FY 13	$22,786,482	$13,113,000	$12,289,000	1.10%	See note (4) below.

FY 14	$23,310,571	$13,506,000	$12,658,000	1.10%	See note (4) below.
FY 15	$23,846,714	$13,912,000	$13,037,000	1.11%	See note (4) below.
FY 16	$24,395,188	$14,329,000	$13,429,000	1.12%	See note (4) below.
FY 17	$28,256,278	$16,360,000	$15,325,000	1.10%	See note (4) below.

Notes:

1. Per TYSP Guidance, MII does not include the SC DM Reduction Plan funds.

2. With carryover funding, the actual spend on maintenance in FY2006 is estimated to be $8,300K.

3. Per TYSP Guidance, this figure does not include the SC DM Reduction Plan funds.

4. VFA has been commissioned to prepare cost estimates for the Replacement Plant Value (RPV) and average annual maintenance cost for each of 19 high value/low maintenance buildings and structures at SLAC. See Appendix 6 for a list of these assets. These "unique structures" include all the tunnels and other underground structures, the heavy concrete experimental halls and the Klystron Gallery and consist of 884K of the site's nearly 1,800K square feet of buildings. From these cost estimates, which will be broken down into the Uniformat Category II Classification of systems and components, a proposal will be submitted to DOE-SC that will identify a conventional facility indicator (CFI) to compute an adjusted RPV to use for calculating MII. The CFI percentage is equal to the percent of the total RPV that is attributable to maintainable systems and components. The planned maintenance budget (Site Plan in the table above) will then be divided by the site RPV that includes these "adjusted RPVs" to determine MII and to compare with SC's goal for a maintenance investment level of 2% of RPV. This high value/low maintenance proposal is expected to be submitted in July 2006.

The planned maintenance budget is funded so that the deferred maintenance backlog decreases each year.

See Appendix 4 "FY 08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission" for a list of the major repairs and "replacements in kind" projects planned for FY2007 and FY2008.

H. Deferred Maintenance Reduction (DMR)

SLAC had a deferred maintenance (DM) backlog of $21,289,870 and an Asset Condition Index (ACI) of 0.98 at the end of FY2005. In FY2006 the FIMS DM backlog list was carefully reviewed and compared with the Laboratory's Facilities Five Year Plan. In addition, the SLI line item project "Safety and Operational Reliability Improvements" was reviewed to identify DM not previously captured. This revised DM backlog, which currently totals $28,335,860 and may increase with the FY2006 condition assessment, has yet to be entered into FIMS. If the SLAC proposal for adjusted RPVs explained in Section IV.G above, which will assuredly reduce the real property RPV, is approved by DOE-SC, SLAC's MII will increase but its ACI will be reduced. Because of this uncertainty, SC has placed SLAC in the "DM Reduction Program" with the DM reduction funding levels shown in the table below for FY2007 through FY2011. Therefore SLAC has developed its planned maintenance budget (in Section IV.G above) and DM Reduction Plan below based upon being in the DM Reduction Program for five

years, and will review its ACI after the high value/low maintenance issue is finalized with DOE-SC.

It must be emphasized that the annual estimated additions of DM in the table below are very rough, particularly because a third party CAS inspection program is being initiated for OSFs in FY2006 which may result in the identification of more deferred maintenance than expected.

DM Reduction Program

	SC DMR Funding Goal (000)	Site DMR Funding Plan (000)	Estimate of DM at the end of the Fiscal Year (000)	Estimated ACI (estimated DM/ estimated RPV)
FY 05	NA	NA	$ 21,290	0.98
FY 06	NA	Additions: $8,246, Inflation: $679, Reductions: GPP $445, Operating Funded $260	$ 29,510	0.97
FY 07	792	Additions: $1,200, Inflation: $706, Reductions: SLI SORI $2,682, GPP $1,176, Operating Funded $1,087	$ 26,472	0.97
FY 08	1440	Additions: $1,250, Inflation: $638, Reductions: SLI SORI $6,484, GPP $225, Operating Funded $2,173	$ 19,477	0.98
FY 09	2100	Additions: $1,300, Inflation: $478, Reductions: Operating Funded $2,810	$ 18,445	0.98
FY 10	2760	Additions: $1,350, Inflation: $455, Reductions: Operating Funded $2,760	$ 17,490	0.98
FY 11	2760	Additions: $1,200, Inflation: $430, Reductions: Operating Funded $2,760	$ 16,360	0.98
FY 12		Additions: $1,250, Inflation: $405, Reductions: Operating Funded $1,693	$ 16,322	0.99
FY 13		Additions: $1,300, Inflation: $405, Reductions: Operating Funded $1,800	$ 16,228	0.99
FY 14		Additions: $1,350, Inflation: $404, Reductions: Operating Funded $1854	$ 16,128	0.99
FY 15		Additions: $1,400, Inflation: $403, Reductions: Operating Funded $1,910	$ 16,021	0.99
FY 16		Additions: $1,450, Inflation: $402, Reductions: Operating Funded $1,967	$ 15,906	0.99
FY 17		Additions: $1,500, Inflation: $400, Reductions: Operating Funded $2,144	$ 15,662	0.99

The FY 08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission in Appendix 4 identifies the operating funded DMR projects in Section 5.3 Direct Funded Deferred Maintenance (by Site Program) and Section 5.4 Indirect Funded Deferred Maintenance (from Overhead). The completion of SLI project "Safety and Operational Reliability Improvements" will remove $9.17 million of deferred maintenance in FY2007 and FY2008.

I. Recapitalization & Modernization

SLAC has planned a series of line item projects and GPPs to keep its existing conventional facilities modern and relevant in an environment of changing standards and missions. The recapitalization requirements are in addition to sustainment activities and deferred maintenance reduction and consist of activities to replace or modernize existing facilities.

1. Line Items

See Appendix 5, Prioritized List of Line Item Projects, for the list of planned SLI line item projects, including those in the Alternate Investment Plan, necessary to renovate and upgrade 40 year old buildings and utilities to maintain reliability and to support expected programmatic mission activities well into the 21st century.

2. GPP

See Appendix 4 "FY 08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission" for the GPP plan. Appendix 7 "SLAC HEP GPP Data for 2008 General Plant Projects" contains the CAMP scoring information for the GPPs that was submitted to DOE-SC in March 2006.

J. Site Space Bank Analysis

The table below provides a year by year summary of SLAC's Space Bank status. Only buildings that are proposed at this time to be SC-funded are included. Potential third party financed projects (see Section IV. N. "Third Party / Non-Federal Funded Construction of New Buildings") are not included.

Space Bank Plan

	A	B	C	D
Year	Expected Additions (GSF)	Expected Removals (GSF)	Net Change (A minus B) (GSF)	Available Offsetting Space at the Site (GSF)
FY 05	NA	NA	NA	113, 846
FY 06	0	55,396 (1) 6,008 (Buildings 102A, 102B, 113 High Bay)	(61,404)	175,250
FY 07	0	2,148 (Trailers 288, 289, 290 and 293)	(2,148)	177,398
FY 08	0	0	0	177,398
FY 09	167,500 (LCLS)	0	167,500	9,898
FY 10	1,000 (Radiological Calibration Facility)	223 (Radiological Calibration Facility)	777	9,121
FY 11	0	0	0	9,121
FY 12	0	0	0	9,121
FY 13	0	0	0	9,121
FY 14	0	0	0	9,121
FY 15	0	0	0	9,121
FY 16	0	0	0	6,973

FY 17	105,000 (LCLS Future FELs)	0	105,000	(95,879)

Note 1
On March 4, 2005 Secretary of Energy Samuel Bodman approved a "Waiver of Requirement for Eliminated Excess Space at SLAC" for a space offset of 55,396 square feet of excess facility space at the Lauristen High Energy Laboratory at California Institute of Technology and 93,056 square feet of excess space at Argonne National Laboratory – East. The excess space at Lauristen High Energy Laboratory was scheduled for title transfer no later than the end of FY2005, but has yet to occur. This transfer is assumed to be executed in FY2006.

It is not possible to predict detailed facility mission needs to the accuracy needed to speculate on whether SLAC may have excess facilities to demolish by 2013 when construction is planned to start for the LCLS Future FELs project, or whether a space waiver will be requested as was the case for LCLS.

K. Site's Alternate Investment Plan for SLI Line Items

An Alternate Investment Plan is being submitted for SLI line item projects. GPPs have not been included in the Alternate Investment Plan, even though SLAC has not followed the GPP funding profile provided in the TYSP Guidance, because with DOE-SC approval SLAC can reprogram its infrastructure budget between GPP and operating funds to accommodate the specific types of projects that need to be addressed each year.

The table below compares the SC F&I investment plan for SLI line item funding with the line item funding required for SLAC to achieve its vision and goals (see Section IV.A) by 2020.

SLAC's Alternate Investment Plan

Year	SC Planned SLI Line Item Funding (000)	Site Alternate Funding Plan for SLI Line Items (000)	SLI Project Starts by Year
FY 05	Safety and Operational Reliability Improvements - $2,528	Safety and Operational Reliability Improvements - $2,528	Ongoing SLI project
FY 06	Safety and Operational Reliability Improvements - $5,314	Safety and Operational Reliability Improvements - $5,314	
FY 07	Safety and Operational Reliability Improvements - $5,770	Safety and Operational Reliability Improvements - $5,770	
FY 08		Electrical Distribution Upgrade Phase I - $2,100	Electrical Distribution Upgrade Phase I (TEC = $19.6 million)
FY 09		Electrical Distribution Upgrade Phase I - $8,400	
FY 10		Electrical Distribution Upgrade Phase I – $9,100 Electrical Distribution Upgrade Phase II - $2,000	Electrical Distribution Upgrade Phase II (TEC = $19.6 million)
FY 11		Electrical Distribution Upgrade Phase II - $7,200	
FY 12		Electrical Distribution Upgrade Phase II - $10,400	
FY 13		Electrical Distribution Upgrade Phase III - $2,400	Electrical Distribution Upgrade Phase III (TEC = $23.9 million)
FY 14		Electrical Distribution Upgrade Phase III - $8,000	

FY 15	Electrical Systems Upgrade - $3,000	Electrical Distribution Upgrade Phase III – $13,500 Building Rehabilitation Project - $5,700	Building Rehabilitation Project (Administration & Engineering, Central Lab, Central Lab Addition) (TEC = $25.0 million)
FY 16	Electrical Systems Upgrade - $18,000	Electrical Distribution Project Phase IV - $2,500 Building Rehabilitation Project - $8,800	Electrical Distribution Upgrade Phase IV (TEC = $22.2 million)
FY 17		Electrical Distribution Project Phase IV - $7,300 Building Rehabilitation Project - $10,500	
Total	$34,612	$111,512	

The site electrical distribution system, particularly the section that serves the Klystron Gallery and Linac, will be in need of upgrade in the near future. The distribution system that will require replacement has been in service for over 40 years and is approaching the end of its economic life. This proposed "Electrical Distribution Upgrade" project is estimated to cost $85 million (in then-year costs) and is planned to be done in four phases over an approximately eleven year period, from FY2008 through FY2018. The major components of this project are 12KV substations, but high voltage distribution cable and some 480V distribution centers are also included. Although the electrical equipment has been well maintained and is still reliable, replacement parts are becoming difficult to impossible to obtain (which will eventually affect reliability) and for safety reasons excessive arc flash distances must now be maintained in front of the substations. With the Linac to provide electron beam to LCLS from the last third of the Linac beginning in FY2009 and the fact that installation of the proposed upgrades to LCLS, which may become operational in FY2013 and FY2017, will require operation of the entire Linac, the next decade would be the optimum time to replace the aged and obsolete electrical distribution system along the Klystron Gallery. This project will not reduce the current deferred maintenance backlog, but will address concerns about long term operational reliability and beam "on-line time" for LCLS and the other experimental projects that will be served by the Linac in the future.

The "Building Rehabilitation Project" is proposed to rehabilitate and modernize the three oldest major office and laboratory buildings on the site, the Administration and Engineering Building, Central Laboratory and Central Laboratory Addition. These buildings range in age from 38 to 43 years. This project would reduce deferred maintenance by about $1.8 million, upgrade the mostly original building interiors to modern standards, bring the buildings into compliance with the American Disabilities Act, renovate the HVAC systems and upgrade the electrical distribution systems with new panels and receptacles necessary to serve today's electronic office environment. This project is of lower priority than the Electrical Distribution Upgrade project, but is proposed to be funded in FY2015 – FY2017 .

See Appendix 5, Prioritized List of Line Item Projects, for a description of these projects.

Proposed Programmatic Initiatives

High Energy Density Science (HEDS) Research Center

This project will consist of a 7,500 square foot building to house a high energy (8kJ) laser and target station. The laser and target station will support a rich HEDS research program. Another target station will be housed in the Linac Coherent Light Source Far Experiment Hall, where the LCLS x-ray beam will be used to probe the extreme states of matter created

by the 8 kJ laser. The estimated cost of this project, which is proposed for in FY2008 – FY2009, is $13 million.

Summary of Site Impacts

GSF Added: 7,500
GSF Demolished: None
Space Bank: None
Completion Date: 2009
RPV (conventional facilities): $13 million
Increase in Site Maintenance Funding: Unknown at this time
Staff Increase: Included with LCLS in FY2009
Support: Existing site support adequate
Utilities: Existing site utilities adequate
Traffic & Parking: Existing roads adequate, parking needs undetermined at this time

L. Performance Indicators and Measures

The FY2006 Facilities Management Contract Performance Measures are in Appendix 8.

The Proposed FY2007 Facilities Management Contract Performance Measures are in Appendix 9. These performance measures are not all-inclusive, but represent new PMs that address the areas of property management that are of recent concern to SLAC and the DOE SSO.

M. Energy Management

SLAC maintains a Comprehensive Energy Management Program and Plan (CEMP) consistent with DOE Order 430.2A "Departmental Energy and Utilities Management," in accordance with related sections of the Energy Policy Act of 2005 and in conformance with guidelines developed by SC. CEMP includes specific annual goals that are negotiated with SC and made a matter of record within two months of an approved Laboratory budget for project funds. Goals may be revised during the year by mutual agreement between the Laboratory and SC. This plan is incorporated into SLAC's Performance Evaluation and Measurement Plan (PEMP). In early FY2007 CEMP will be updated to target the ten year time span of FY2007 through FY2016.

The Energy Conservation Program Manager in the Conventional and Experimental Facilities Department manages this program in accordance with established objectives and goals directly related to energy- and water-efficient operations.

Compliance with DOE Order 430.2A - Departmental Energy and Utilities Management

DOE Order 430.2A requires that "DOE energy and utilities management processes must include Performance Agreements for Energy and Utilities Management containing performance objectives using a graded approach." SLAC will continue to comply with this requirement. The FY2006 SLAC Energy Management Plan includes five objectives which comprise 34 specific goals that are currently in process of implementation.

SLAC will continue to submit its Annual Report on Energy Management and Conservation Program to DOE. In addition to the graded assessment of implementation of the current year's Energy Management Plan, the SLAC Energy Conservation Program Manager submits Data

Reports that include consumptions and costs of electrical energy, natural gas, diesel fuel, LPG, water, energy savings from and cost of implemented energy-efficiency projects. Also, energy consumptions and costs are being submitted to DOE by means of the web-based EMS 4 system.

80%-90% of SLAC's total site electrical energy is consumed by experimental research facilities for high energy physics and synchrotron radiation experiments. The annual energy requirements vary with the types of experiments and the operations schedule for those experiments, both of which vary from year to year. The energy use by the experimental research facilities cannot be separated from the energy use by standard buildings with the existing metering capability. Therefore, it is not possible to accurately determine the energy reductions resulting from the conservation projects implemented to date. In order to comply with Section 102 (a), Energy Reduction Goals, of the Energy Policy Act of 2005, a study is underway to identify the appropriate locations to install sub-metering and an estimate of the installation costs of those meters.

Implementation of Energy Policy Act of 2005

All the relevant sections of the Energy Policy Act of 2005 (sections 102, 103, 104, 105, 109, 203) will be addressed in the FY2007 CEMP. Implementation of Section 103, "Energy Measurement and Accountability" began in FY2006 with a conceptual design and cost estimate of a new power metering and monitoring system.

There are three major sub-programs within SLAC's Energy Conservation Program: Site Lighting Upgrade, Site DDC EMS System Upgrade and Site Water Conservation Program.

Site Lighting Upgrade
This multi-year program replaces energy-inefficient lighting.

Site DDC EMS System Upgrade
This is a multi-year program that upgrades the existing central energy management system that controls site HVAC systems, hot and chilled water plants and some lighting.

Site Water Conservation Program
The Site Water Management Plan is currently under development and is a goal for FY2006.

SLAC is implementing life cycle cost-effective improvements on an annual basis, thus contributing to energy and greenhouse gas emission reductions. New project proposals are being submitted to the DOE Federal Energy Management Program and the SLAC Infrastructure Committee for funding consideration. Potential projects include replacement of energy-inefficient lighting assemblies, lighting control, DDC Energy Management System (EMS) upgrade, HVAC systems upgrade, replacement of energy-inefficient motors, chilled and hot water systems upgrades, and compressed air system upgrade.

N. Third Party / Non-Federal Funded Construction of New Buildings

Third Party Financed Projects

Through its strong connection with Stanford, SLAC has the opportunity to raise third party funding. The following projects are planned for the next decade, and the option of third party funding will be considered for each if DOE-SC funding is not available.

Photon Science Building

Scientific initiatives organized as centers of excellence with Stanford campus faculty will bring together research scientists and students to work towards common goals in areas that cut across the physical, biomedical, engineering and computational sciences. A plan has been developed to create a new Center building located at SLAC to house these activities. A 35,000 square foot multi-story building will provide for the staff, faculty, students and visiting scientists with supporting infrastructure such as office, meeting, conference, training and laboratory space. It will house laboratory facilities and computing equipment. The building will be sited in the new area of SLAC's campus near the LCLS CLOC. Based upon planned occupancy in FY2009, the estimated cost of this building is $30 million.

X-Ray Laboratory for Advanced Materials Science (XLAM)

This project will consist of a 20,000 square foot office, seminar and laboratory building located in the new area of the SLAC campus near the LCLS CLOC to house a group from SSRL and Stanford University that has created a strategic initiative focused on utilizing x-rays to characterize new materials and study their properties. The objective of this initiative is to enable forefront materials research by Stanford faculty and to make available newly developed techniques to the broader SSRL user community. The facility will serve faculty, post-doctorates and students. This project is planned for FY2010 and is estimated to cost $15 million.

Central Office Building

This 25,000 square foot multi-story office building is needed to provide housing for staff working on the International Linear Collider (ILC). Because the ILC program is expected to grow in the near future, the Laboratory proposes to build a new facility for the group rather than spend significant money to seismically upgrade their current accommodations of substandard trailers and modular buildings that are 40 years old. Space will also be provided to accommodate staff in other programs that currently reside in deteriorated, seismically deficient trailers that were not intended to be used for more than a few years and are poorly suited to satisfy current needs. The building will provide modern office space in the Central Campus near the Central Laboratory, conveniently located near the shops and the entrance to the experimental areas. The estimated cost of this building, which is proposed for FY2010, is $16.5 million.

Computer Building Annex

A 22,000 square foot multi-story annex on the west side of the existing Computer Building is proposed for FY2011 to provide for the expected growth in computing for the SLAC science program. The existing computer building is already operating at the limit of available floor space and the continued expansion of capacity needed to serve the SLAC science program is being accommodated by acquiring increasingly densely packed equipment. A recent engineering study has confirmed that the building will reach the limits of power and cooling density before the end of the decade. At this time SLAC must be ready for a major expansion of computing to meet the expected needs of its programs in high-energy physics, particle astrophysics and cosmology, and new initiatives in data-intensive scientific computing. The size of the required building has been determined by an engineering study based on the expected computing needs early in the next decade, and will

include approximately 16,000 square feet of raised floor for computer equipment. The estimated cost of this building is $14 million.

SLAC Guest House, Phase 2

A 13,000 square foot addition will be needed if occupancy of SLAC's new 112 room Guest House increases. The project will consist of approximately 53 rooms and would be sited to utilize the common areas constructed for the initial facility, including the lobby, offices, meeting rooms, exercise facility and service areas. The estimated cost of this building is $7 million in FY2014.

V. Appendices

Appendix 1	Aerial View of SLAC
Appendix 2	Inventory and Maps of Buildings
Appendix 3	Inventory and Maps of Infrastructure/ Site Utility Systems
Appendix 4	FY 08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission
Appendix 5	Prioritized list of Line Items Projects
Appendix 6	High Value/Low Maintenance Unique Buildings & Structures
Appendix 7	SLAC HEP GPP Data for 2008 General Plant Projects
Appendix 8	FY2006 Facilities Management Contract Performance Measures
Appendix 9	Proposed FY2007 Facilities Management Contract Performance Measures

Appendix I

Aerial View of SLAC

Appendix 2

Inventory and Maps of Buildings

The SLAC Site Plan and building and trailer inventory list can be found at:

DWG #: GP-581-721-49-C10, Sheet 1, Sheet 2 and Sheet 3
Title: SLAC SITE PLAN CAMPUS & RESEARCH AREA
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5817214910.pdf

Appendix 3

Inventory and Maps of Infrastructure/ Site Utility Systems

The site utility drawings can be found at:

DWG #: GP-581-656-23-C6, Sheet 1 and Sheet 2
Title: SITE UTILITIES DOMESTIC & FIRE WATER LINAC, CAMPUS, BSY, PEP2 & SLC AREA PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5816562306.pdf

DWG #: GP-581-656-17-C1
Title: SITE UTILITIES CHILLED WATER S. & R. CAMPUS, B.S.Y. AREA PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5816561701.pdf

DWG #: GP-581-656-20-C1
Title: SITE UTILITIES HOT WATER SUPPLY & RETURN CAMPUS, B.S.Y. AREA PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5816562001.pdf

DWG #: GP-581-656-32-C1
Title: SITE UTILITIES SANITARY SEWERS CAMPUS, BSY, PEP & SLC AREA PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5816563201.pdf

DWG #: GP-581-656-34-C2, Sheet 1 and Sheet 2
Title: SITE UTILITIES STORM DRAIN LINAC, CAMPUS, BSY, PEP2 & SLC AREA PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/id5816563402.pdf

DWG #: GP-581-656-14-C1
Title: SITE UTILITIES NATURAL GAS CAMPUS, BSY, PEP & SLC AREA PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5816561401.pdf

DWG #: GP-581-656-53-C1
Title: SITE UTILITIES COMPRESSED AIR CAMPUS, BSY, PEP & SLC AREA PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5816565301.pdf

DWG #:GP-581-656-03-C2
Title: SITE UTILITIES COOLING TOWER CAMPUS, BSY, PEP & SLC AREA PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5816560302.pdf

DWG #: GP-581-656-05-R0
Title: UNDERGROUND UTILITIES COOLING TOWER WATER KLYSTRON GALLERY SCHEMATIC
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/5/gp5816560500.pdf

DWG #: GP-885-106-01-R6
Title: ELECTRICAL SYSTEMS POWER & SIGNAL MANHOLES KEY PLAN
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/8/gp8851060106.pdf

DWG #: GP-885-105-01-R10
Title: ELECTRICAL SYSTEMS MASTER SUBSTATION PG&E METERING SCHEME
http://mdweb.slac.stanford.edu/Doc%20Control.Utilities.View%20Images.displayImage.php?img=pdf/Released/8/gp8851050110.pdf

Appendix 4

FY 08 Integrated Facilities and Infrastructure (IFI) Crosscut Budget Submission
(Excel Spreadsheet)

The FY08 Integrated Facilities and Infrastructure Crosscut Budget has been modified to conform to TYSP Guidance.

FY 08 Integrated Facilities and Infrastructure Budget Data Sheet (IFI) - Modified to Conform to TYSP Guidance SITE NAME: Stanford Linear Accelerator Center (SLAC)	Project Number	Deferred Maint. Reduct-ion (1)	Gross Building Area Added	Gross Building Area Removed	FY 05 Actual ($000)	FY 06 Approp. ($000)	FY 07 Approp ($000)	FY 08 Budget ($000)	FY 09 Budget ($000)	FY 10 Budget ($000)	FY 11 Budget ($000)	FY 12 Budget ($000)
1.0 Capital Line Item												
1.1 New Infrastructure Construction (facilities and additions)												
Subtotal 1.1		0	0	0	0	0	0	0	0	0	0	0
1.2 All Other Infrastructure Projects												
Safety and Operational Reliability Improvements (TEC=$15.6M)	04-MEL-001-036	9,166			393	5,314	5,770					
Subtotal 1.2		9,166	0	0	393	5,314	5,770	0	0	0	0	0
Total Infrastructure Line Items (1.1 + 1.2)		9,166	0	0	393	5,314	5,770	0	0	0	0	0
1.3 Programmatic Line Items that Add Space												
Linac Coherent Light Source (LCLS) PED (TEC=$36M)	03-SC-002	0	0	0	16,805	2,518	161					
Linac Coherent Light Source (LCLS) Construction (TEC=$279M)	05-R-320	0	167,500	0	7,868	82,170	105,740	51,356	10,000			
LCLS Future FELs (Technical Systems+Conventional Facilities) (TEC~$1,200M)		0	105,000	0							14,000	51,000
Subtotal 1.3		0	272,500	0	24,673	84,688	105,901	51,356	10,000	0	14,000	51,000
Subtotal Line Item Projects (1.1 +1.2+1.3)		9,166	272,500	0	25,066	90,002	111,671	51,356	10,000	0	14,000	51,000
1.4 Third Party Financed New Facilities												
Central Office Building (TEC=$16.5M)		TBD	25,000	TBD						16,500		
Photon Science Building (TEC=$30M)		0	35,000	0					30,000			
Computer Building Annex (TEC=$14M)		0	22,000	0							14,000	
X-Ray Laboratory for Advanced Materials Science (XLAM) (TEC=$15M)		0	20,000	0						15,000		
Subtotal 1.4		0	102,000	0	0	0	0	0	30,000	31,500	14,000	0
Subtotal Line Item and Third Party Financed Projects		9,166	374,500	0	25,066	90,002	111,671	51,356	40,000	31,500	28,000	51,000
2.0 General Plant Project (GPP)												
2.1 New Construction (facilities and additions)												
Basic Energy Sciences / High Energy Physics:												
New Building - Radiological Calibration Facility		0	1,000	223						300		
Subtotal 2.1 New Construction GPP		0	1,000	223	0	0	0	0	0	300	0	0
2.2 All Other GPP Projects (including alterations and improvements)												
Basic Energy Sciences:												
X-ray Laboratory for Advanced Material (XLAM)		0			649	600						
Building 120 Fire and Oxygen Deficiency Hazard Alarm Upgrade		0				165						
Building 118 Air Handler Unit		0				150						
Install Additional LN Storage Capacity		0					600					
Building 140 Air Handler Upgrade		0						170				
Building 118 Chiller Upgrade		0						210				

FY 08 Integrated Facilities and Infrastructure Budget Data Sheet (IFI) - Modified to Conform to TYSP Guidance SITE NAME: Stanford Linear Accelerator Center (SLAC)	Project Number	Deferred Maint. Reduct-ion (1)	Gross Building Area Added	Gross Building Area Removed	FY 05 Actual ($000)	FY 06 Approp. ($000)	FY 07 Approp ($000)	FY 08 Budget ($000)	FY 09 Budget ($000)	FY 10 Budget ($000)	FY 11 Budget ($000)	FY 12 Budget ($000)
Building 131 Cooling Tower Water Input Line Upgrade		0						120				
SPEAR Trestle Upgrade		0						100	300			
Upgrade Building 120 Electrical Motor Control Center		0							300			
SPEAR3 South Arc Seismic Upgrade Project		0								650		
BTS and Booster Seismic Reinforcement Project		0									650	
SPEAR3 Seismic Retrofit at Beam Lines 1 and 9		0										650
Basic Energy Sciences / High Energy Physics:												
Light Assembly Bldg 033 Substation		0			1,231							
Wireless Upgrade		0			227							
SLAC 10 Gb Network Upgrade		0			823							
Building 751 Boiler		0			206							
Additional Power 1st Floor Bldg 050		0			15							
B025 Ceiling Tile Retrofit and Service Platform		0			148							
Replace SL 10/30 Instrument		0			10							
Klystron Gallery Grounding		0			10							
B50 1st Floor Seismic Upgrades		0			93							
ROB Office MODS		0			1							
Roof Replacement Vacuum Bldg. 031		0			5							
Secondary Containment Upgrade		0			2							
Test Lab Feeder Replacement		0			8							
HVAC Upgrade SCS		335			141							
Erosion Control Sector 6		0			3							
Synchronous Condenser		0										2,500
HVAC Upgrade SCS 1st and 2nd Floor		0					71					
Upgrade Substation 7		0				50						
Seismic Upgrade for ESB/Shield Upgrade		0					199					
Secondary Containment Upgrade for Power Supplies for PEP II		0				62						
PEPII RF System Grounding		0				27						
Replace Linac VVS Transformer		0				487						
Cooling Tower Chemical Huts Replacement (2 Huts)		220				200						
ESA/ESB Storm Drain Connections		0				193						
Building 81 Electrical Upgrade		0				84						
Instrument Science Operating Center (ISOC)		0				440	260					
Bldg 50 1st Floor Infrastructure for Water Cooled Racks		0				178						
12kv Feeder from Guest House to ROB/Kavli		0				353						

FY 08 Integrated Facilities and Infrastructure Budget Data Sheet (IFI) - Modified to Conform to TYSP Guidance	Project Number	Deferred Maint. Reduct-ion (1)	Gross Building Area Added	Gross Building Area Removed	FY 05 Actual ($000)	FY 06 Approp. ($000)	FY 07 Approp ($000)	FY 08 Budget ($000)	FY 09 Budget ($000)	FY 10 Budget ($000)	FY 11 Budget ($000)	FY 12 Budget ($000)
SITE NAME: Stanford Linear Accelerator Center (SLAC)												
Replace K10 Switchgear		1,176				668	409					
Space Upgrades/Utilization Improvements		0					1,000	1,000	300	500	300	300
Secondary Containment Upgrades:		0					75	75	75	75	75	75
Bldg 50 Dedicated Chillers		0					75	500	500	500		
Additional Power to Bldg 50		0					100					
Sesimic Upgrade - End Station A Structural Upgrade		0					308					
Bldg 50 1st Floor Infrastructure for Water Cooled Racks Phase II		0					100					
Seismic Upgrade - End Station B Structural Upgrade		0					175					
UPS Expansion for Bldg 050		0						250	250			
HVAC Building 015, Power Conversion		225						435				
Bldg 50 Dedicated Backup Generator		0						200	200			
LINAC Smoke Detector Project (Sectors 2-30)		0							300	381		
Radioactive Material Storage Yard (RAMSY) Upgrade		0							300	373		
IR-2 Hillside Stabilization		0							600	200		
Seismic Upgrade - ESA Counting House		0								150		
Seismic Upgrade - Beam Dump East Structural Upgrade		0							509			
Replace Magnetic Heat Exchangers (Controls)		0								240		
Replace Telephone Switch		0								850	850	
He Recovery System		0									312	
On-Site Compressed Natural Gas Fueling Station		0									486	
Seismic Upgrade Klystron Test Lab		0									110	
Seismic Retrofit (Various Bldgs)		0									190	300
High Speed Network Cabling to Desktops		0										540
Elevator for Klystron Test Lab Second Floor		0										150
Science Laboratories Infrastructure (Deferred Maintenance)												
HVAC Replacement Building 20		225				225						
Subtotal 2.2 All Other (recap) GPP		**2,181**			**3,572**	**3,882**	**3,372**	**3,060**	**3,634**	**3,919**	**2,973**	**4,515**
Subtotal GPP (2.1 + 2.2)		**2,181**	**1,000**	**223**	**3,572**	**3,882**	**3,372**	**3,060**	**3,634**	**4,219**	**2,973**	**4,515**
4.0 Operating/Expense for Excess Elimination and Other												
4.2 All Other												
Basic Energy Sciences / High Energy Physics:												
Klystron Gallery Elect Panel Code Upgrade (Various sectors)		0		0			135	135	270	270	270	270
Seismic Studies (Phase I Tank Evaluations)		0		0		30						
Replace Heat Exchangers at Klystron Gallery		0		0			45	45	45	45	45	45
Linac utility outlets replace to OSHA standards		0		0			720					

FY 08 Integrated Facilities and Infrastructure Budget Data Sheet (IFI) - Modified to Conform to TYSP Guidance SITE NAME: Stanford Linear Accelerator Center (SLAC)	Project Number	Deferred Maint. Reduct-ion (1)	Gross Building Area Added	Gross Building Area Removed	FY 05 Actual ($000)	FY 06 Approp. ($000)	FY 07 Approp ($000)	FY 08 Budget ($000)	FY 09 Budget ($000)	FY 10 Budget ($000)	FY 11 Budget ($000)	FY 12 Budget ($000)
Replace Fiat rack panel distribution in Klystron Gallery		0		0			500	500				
Disposal of Legacy Iron Blocks with Lead		0		0			200					
PCB Capacitor Phase Out		0		0			43					
Klystron Gallery Panelboards/Weld Outlets		0		0				360				
Flow Switches for BSY, Linac Sectors 28-30		0		0				150				
4.2 Subtotal		**0**		**0**	**0**	**30**	**1,643**	**1,190**	**315**	**315**	**315**	**315**
Subtotal 4.0 Operating/Expense Projects (4.1 + 4.2)		**0**		**0**	**0**	**30**	**1,643**	**1,190**	**315**	**315**	**315**	**315**
5.0 Maintenance & Repair												
5.1 Direct Funded (by HQ or Site Program)												
Basic Energy Sciences:												
Non-project Facilities Maintenance		0			707	965	995	1,025	1,055	1,090	1,120	1,150
Building 131 Chiller Replacement		0			102							
Building 118 Roof Replacement		0					75					
Building 120 Office and Support Areas HVAC Systems Replacement		0							250			
Building 120 Experimental Areas HVAC Systems Replacement		0								300		
Upgrade of Walkways around Hillside Trailer Complex		0									200	
Building 131 Roof		0										250
Basic Energy Sciences / High Energy Physics:		0										
CT404 Shelter and Platform		0				112						
Helium Tube Trailer Parking/Anchorage		0				130						
Tunnels and Vaults - Water Impacting Electrical Equipment		0					50	50				
HVAC Upgrade Collider Hall		0							100			
PEP Injector Valves Heat Exchangers		0							87			
HVAC Duct Bldg 40		0							250			
Underground Mechanical Utilities - Cooling Tower Water Systems		0								489	489	489
Misc Maintenance Items		0									1,200	1,200
Subtotal 5.1 Total Direct Maintenance & Repair		**0**			**809**	**1,207**	**1,120**	**1,075**	**1,742**	**1,879**	**3,009**	**3,089**
5.2 Indirect (from Overhead)												
Non Project Maintenance		0			5,354	4,985	5,135	5,290	5,450	5,047	4,943	5,150
Building 751 Chiller		0			129							
SCS Cooling - Design and Replace Fan and Cooling Coil		0			18							
Alpine Gate Road / Drainage		0			9							
IR-8 Channel Maintenance		0			62							
Cafeteria Patio Improvements (B042)		0			11							
Site Lighting & Paths: Continuing		0			1	75	75	75	100	100	100	100

FY 08 Integrated Facilities and Infrastructure Budget Data Sheet (IFI) - Modified to Conform to TYSP Guidance	Project Number	Deferred Maint. Reduct-ion (1)	Gross Building Area Added	Gross Building Area Removed	FY 05 Actual ($000)	FY 06 Approp. ($000)	FY 07 Approp ($000)	FY 08 Budget ($000)	FY 09 Budget ($000)	FY 10 Budget ($000)	FY 11 Budget ($000)	FY 12 Budget ($000)
SITE NAME: Stanford Linear Accelerator Center (SLAC)												
Verify/Correct Breaker Panel Labels Site wide:		0				143	280	280	280	280	280	280
Underground Natural Gas Line Replacment - Building 81		0				26						
Underground Natural Gas Line Replacment - Kavli		0				100						
Site Interior Lighting (T12 Ballasts replacements Bldg 25 and 50)		0					100	100				
Underground Mechanical Utilities - Fire Protection Water System		0							66			
Site Interior Lighting Upgrade (T12 Ballasts replacements Site-wide)		0							100	100	100	100
Central Boiler Controls Upgrade (Linked to HVAC Controls - Site wide)		0							284			
HVAC Replacement (MZ-601) at ES&H Bldg (024)		0								285		
Underground Mechanical Utilities - Chilled Water System		0									593	
Miscellaneous Items		0										1,000
Upper Salvage Yard Storm Water Protection		0			3	36						
Wooden Deck Replacements		0				102						
Lower Salvage Yard Stormwater Protection		0			2	45						
Environmental Projects		0				580						
Cafeteria Electrical Modifications		0				54						
Upgrade ALC Modules		0			95	30	100	100	100	100	100	100
Underground Mechanical Utilities - Natural Gas System		0								128		
Misc Maintenance Items		0				0					600	600
Subtotal 5.2 Total Indirect Maintenance & Repair		**0**			**5,684**	**6,176**	**5,690**	**5,845**	**6,380**	**6,040**	**6,716**	**7,330**
Subtotal Total Maintenance & Repair (5.1 + 5.2)		**0**			**6,493**	**7,383**	**6,810**	**6,920**	**8,122**	**7,919**	**9,725**	**10,419**
5.3 Direct Funded Deferred Maintenance (by Site Program)												
Basic Energy Sciences / High Energy Physics:												
Replace K1A & K1B Switchgear		193			193							
Re-roof Cryo Bldg 006 Low Bay		183			183							
IR-4 Chiller Replacement		110				110						
Re-roof Bldg 40 Central Lab		344					344					
HVAC Replacement - Auxiliary Control Bldg (Bldg 003)		300						300				
Bldg 127 Substation Replacement		450						450				
Heavy Fabrication Bldg 026 480 Volt Switchgear Replacement		800						400	400			
Replace High Voltage Cable (various sites-except Research Yard)		300						100	100	100		
Re-roof Counting House 060		350							110			
HVAC Replacement MZ-622, (Bldg 025)		375							375			
Re-roof Bldg 26 Heavy Fab		400							140			
HVAC Replacement - Central Lab 2-story (MZ-806 & MZ-807)		220								350	350	
Re-roof IR-8 Bldg 680 High Bay		500								300		

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Re-roof Bldg 620, IR-2		500									300	
Re-roof IR-6 Bldg 660 High Bay		500									330	
Subtotal 5.3 Total Direct Deferred Maintenance		5,175			376	110	344	1,250	1,125	750	980	0
5.4 Indirect Funded Deferred Maintenance (from Overhead)												
Replace CXL Fire Control System		36			36							
Site Interior Lighting Upgrade (Bldg 040 & 084)		11			11							
B. 127 Chilled Water Maintenance		150				150						
HVAC Replacement for MCC (Bldg 5)		350					400					
Re-roof Computer Center 050		343					343					
Re-roof Cafeteria/Auditorium 42/43		280						330				
Underground Mechanical Utilities - Hot Water System		1,422						593				
Underground Mechanical Utilities - Sewer Drainage System		523							554	554		
Underground Mechanical Utilities - Compressed Air System		291							238			
Underground Mechanical Utilities - Storm Drainage System		357							893	893	893	893
HVAC Bldg 82 Fire House		43									50	
Misc. Indirect DM		563								563	837	800
Subtotal 5.4 Total Indirect Deferred Maintenance		4,369			47	150	743	923	1,685	2,010	1,780	1,693
Total Deferred Maintenance (5.3 + 5.4)		9,544			423	260	1,087	2,173	2,810	2,760	2,760	1,693
Total Maintenance (5.1 + 5.2 +5.3 +5.4)		9,544			6,916	7,643	7,897	9,093	10,932	10,679	12,485	12,112

Appendix 5

Prioritized List of Line Items Projects

SLI Projects

Safety and Operational Reliability Improvements (SLI)

Funding for this project commenced in FY2004 and will continue through FY2007. The TEC is $15.6 million.

This project addresses the Laboratory's aging and deteriorated underground utility systems and many of the remaining seismic remediation issues identified in the 1998 report required by Executive Order 12941, "Seismic Safety of Existing Federally Owned or Leased Buildings." Most of the infrastructure at SLAC dates back to the original construction of the Laboratory between 1962 and 1966. After approximately 40 years, many of the original utility systems are reaching end-of-life and are becoming unreliable and very expensive to maintain. A number of systems fail to meet modern safety standards. Serious deficiencies in the underground piping systems for natural gas, compressed air, low-conductivity water, cooling tower water, chilled water, hot water, fire protection water, sanitary sewer, and storm water that result in leaks and failures that impact operations and create the potential for environmental hazards will be corrected. Seismic upgrades to several buildings and structures that are necessary to provide for safety, protect the DOE's investment in valuable infrastructure, and allow the Laboratory to operate critical facilities shortly after a major earthquake are included.

Site Project Identifier: 04-MEL-001-036
Raw CAMP Score: Scored at the task level (20 tasks)
Adjusted CAMP Score: Range at the task level (20 tasks) – 62.3 to 85.5
TEC: $15,620,000
PED: $1,988,000
OPC: $100,000
Proposed Funding Profile: FY2006 - $5,314,000; FY2007 - $5,770,000

Electrical Distribution Upgrade Phase I (SLI) – Alternate Investment Plan

This is Phase I of a four phase project to rehabilitate and upgrade the site electrical distribution system. Phase I addresses the Klystron Gallery. The pre-CDR budget estimate for Phase I is $19.6 million. Construction is planned for FY2008-FY2010.

This electrical distribution system is 40+ years old and approaching end-of-life. Phase I will rehabilitate the portion that serves Sectors 20 through 30 of the Klystron Gallery, which houses the mechanical and electrical equipment and devices that support the linear accelerator (Linac). This portion of the Linac will serve LCLS which will begin operations in 2009. Six of the 12KV Klystron Gallery substations (five of which serve Sectors 20-30 and the sixth which serves Sectors 9-10), ranging in size from 750KVA to 1,000KVA, and various critical downstream motor control centers, panels and sub-panels (that feed cooling towers, low conductivity water pumping systems and Klystron Gallery lighting and miscellaneous power needs) will be replaced or upgraded. This work will replace obsolete equipment and eliminate the safety concerns related to the excessive arc flash

distances associated with these substations. The paper-insulated 12KV feeders that run between these substations will be replaced with EPR insulated cable. In addition, two variable voltage substations that provide power to the modulators (which through klystrons produce the microwave power to accelerate the electrons and positrons in the Linac) in Sectors 20 through 22 will be replaced with fixed voltage substations.

Raw CAMP Score: 160
Adjusted CAMP Score: 63
TEC Low End: $16,700,000
TEC High End: $22,600,000
TEC Mid-point: $19,600,000
PED: $2,010,000
OPC: $250,000
Proposed Funding Profile: FY2008 - $2,100,000; FY2009 - $8,400,000; FY2010 - $9,100,000

Electrical Distribution Upgrade Phase II (SLI) – Alternate Investment Plan

This is Phase II of a four phase project to rehabilitate and upgrade the site electrical distribution system. Phase II addresses the Klystron Gallery. A pre-CDR budget estimate for Phase II is $19.6 million. Construction is planned for FY2010-FY2012.

This electrical distribution system is 40+ years old and approaching end-of-life. Phase II will rehabilitate specific equipment that serves the Klystron Gallery, which houses the mechanical and electrical equipment and devices that support the linear accelerator (Linac). Sectors 1 through 19 will continue to operate, after the BaBar project is terminated, to provide beam to experiments in End Station A and to the South Arc Beam Experimental Region (SABER) facility. Upgrades to LCLS will also require the operation of Sectors 1 through 19. Five of the 12KV Klystron Gallery substations that serve Sectors 1 through 18, ranging in size from 750KVA to 1,000KVA, and various critical downstream motor control centers, panels and sub-panels (that feed cooling towers, low conductivity water pumping systems and Klystron Gallery lighting and miscellaneous power needs) will be replaced or upgraded. This work will replace obsolete equipment and eliminate the safety concerns related to the excessive arc flash distances associated with these substations. In addition, four variable voltage substations that provide power to the modulators (which through klystrons produce the microwave power to accelerate the electrons and positrons in the Linac) in Sectors 20 through 30 (which will serve LCLS beginning in 2009) will be replaced with fixed voltage substations. This project will also provide a new, alternate 12KV feeder to Substation 507 which serves SSRL and SPEAR3.

Raw CAMP Score: 160
Adjusted CAMP Score: 63
TEC Low End: $16,600,000
TEC High End: $22,500,000
TEC Mid-point: $19,600,000
PED: $1,950,000
OPC: $250,000
Proposed Funding Profile: FY2010 - $2,000,000; FY2011 - $7,200,000; FY2012 - $10,400,000

Electrical Distribution Upgrade Phase III (SLI) – Alternate Investment Plan

This is Phase III of a four phase project to upgrade the site electrical distribution system. Phase III addresses predominately the Klystron Gallery. A pre-CDR budget estimate for Phase III is $23.9 million. Construction is planned for FY2013-FY2015.

This electrical distribution system is 40+ years old and approaching end-of-life. Phase III will rehabilitate specific equipment within the portion that serves Sectors 1 through 14 of the Klystron Gallery, which houses the mechanical and electrical equipment and devices that support the linear accelerator (Linac). Sectors 1 through 14 will continue to operate, after the BaBar project is terminated, to provide beam to experiments in End Station A and to the South Arc Beam Experimental Region (SABER) facility. Upgrades to LCLS will also require the operation of Sectors 1 through 14. Five of the 12KV Klystron Gallery substations that serve Sectors 4 through 14, ranging in size from 750KVA to 1,000KVA, and various critical downstream motor control centers, panels and sub-panels (that feed cooling towers, low conductivity water pumping systems and Klystron Gallery lighting and miscellaneous power needs) will be replaced or upgraded. This work will replace obsolete equipment and eliminate the safety concerns related to the excessive arc flash distances associated with these substations. In addition, five variable voltage substations that provide power to the modulators (which through klystrons produce the microwave power to accelerate the electrons and positrons in the Linac) in Sectors 1 through 10 will be replaced with fixed voltage substations. This project will also upgrade the feeder between VVS-1A and VVS-1B and the feeder between VVS-6 and VVS-7.

Raw CAMP Score: 160
Adjusted CAMP Score: 63
TEC Low End: $20,400,000
TEC High End: $27,500,000
TEC Mid-point: $23,900,000
PED: $2,370,000
OPC: $250,000
Proposed Funding Profile: FY2013 - $2,400,000; FY2014 - $8,000,000; FY2015 - $13,500,000

Electrical Distribution Upgrade Phase IV (SLI) – Alternate Investment Plan

This is Phase IV of a four phase project to upgrade the site electrical distribution system. Phase IV addresses the Klystron Gallery and a host of other substations and equipment. A pre-CDR budget estimate for Phase IV is $22.2 million. Construction is planned for FY2016-FY2018.

Phase IV will replace four variable voltage substations that provide power to the modulators (which through klystrons produce the microwave power to accelerate the electrons and positrons in the Linac) in Sectors 12 through 18 of the Klystron Gallery with fixed voltage substations. Sectors 12 through 18 will continue to be operated, after the BaBar project is terminated, to provide beam to experiments in End Station A and to the South Arc Beam Experimental Region (SABER) facility. Upgrades to LCLS will also require the operation of Sectors 12 through 18. Other high voltage system upgrades will be done including substations serving Auxiliary Control Building #3, Light Assembly Building #25, Plant Maintenance & Utilities Building #35 and Central Laboratory Building #40. This phase includes Master Sub Station electrical upgrades: Power Quality recorders and associated alarm panels/communication, and 230kV transformer tap changers.

Raw CAMP Score: 160
Adjusted CAMP Score: 63
TEC Low End: $18,900,000
TEC High End: $25,600,000
TEC Mid-point: $22,200,000
PED: $2,537,000
OPC: $250,000
Proposed Funding Profile: FY2016 - $2,500,000; FY2017 - $7,300,000; FY2018 - $12,400,000

Building Rehabilitation Project (Administrative & Engineering, Central Lab, Central Lab Addition) (SLI) – Alternate Investment Plan

A pre-CDR budget estimate for the rehabilitation of the three major office and laboratory buildings at SLAC is $25.0 million. These buildings range in age from 38 to 43 years. Construction is planned for FY2015 – FY2017.

This project will rehabilitate and improve Building 041, Administration and Engineering ($8.1 million), Building 040, Central Laboratory ($11.0 million) and Building 084, Central Laboratory Addition ($5.9 million). Work includes interior painting, new floor coverings, new suspended ceilings, elevators and other ADA accommodations, energy efficient lighting, additional electrical panels and receptacles, and HVAC upgrades. A more accurate cost estimate will be provided following engineering review.

Raw CAMP Score: 110
Adjusted CAMP Score: 50
TEC Low End: $21,300,000
TEC High End: $ 28,800,000
TEC Mid-point: $25,000,000
PED: $1,700,000
OPC: $250,000
Proposed Funding Profile: FY2015 - $5,000,000; FY2016 - $5,000,000; FY2017 - $5,800,000; FY2018 - $5,000,000; FY2019 – 5,000,000

Appendix 6

High Value/Low Maintenance Unique Buildings & Structures

Property ID	Property Name	Usage	Gross SF
001	Acceleration Housing	Accelerator Tunnel	115,461
002	Klystron Gallery	Accelerator Support Bldg.	355,821
009	Beam Switch Yard	Underground Accelerator Structure	70,175
010	Damping Ring Vault – South	Underground Accelerator Structure	4,068
011	Damping Ring Vault – North	Underground Accelerator Structure	5,460
061	End Station A	Experimental Hall	27,880
062	End Station B	Experimental Hall	16,828
063	Beam Dump East	Underground Utility Structure	2,000
132	Crane Shelter West Pit	Houses SPEAR Support Equipment, Part of Ring Tunnel	4,620
140	SSRL Injector Shelter	Accelerator Shelter	9,750
600	Pep Ring Accelerator Housing	Beam Line Tunnel	85,656
620	IR 2 Hall	Experimental Hall	9,324
640	IR 4 Hall	Experimental Hall	3,089
660	IR 6 Hall	Experimental Hall	9,375
680	IR 8 Hall	Experimental Hall	10,743
720	IR 12 Hall	Experimental Hall	7,713
748	Collider North Arc	Beam Line Tunnel	47,972
749	Collider South Arc	Beam Line Tunnel	51,490
750	Collider Hall	Experimental Hall	46,751
Total	**19 buildings & structures**		**884,176 SF**

Appendix 7

SLAC HEP GPP Data for 2008 General Plant Projects
(Excel Spreadsheet)

SLAC HEP GPP Data for 2008
General Plant Projects Detail
(Estimates in $000)

Project Title	Project Type(2)	Description	Raw CAMP Score	Adjusted CAMP Score	CAMP Driver (1)	Project Number	Submit #	Current TEC	Prior Funding	Funding 06	Funding 07	FY 2008 Level Funding	FY 2008 Lab Proposed
Seismic Upgrade for ESB/Shield Upgrade	P	Upgrade the seismic strength of the Test Accelerator roof/wall shielding connection inside End Station B to meet SLAC life-safe requirements.	230	76	P	5257	202	436	237		199		
Instrument Science Operating Center (ISOC)	P	Construct a GLAST Operations Facility in Building 084. The GLAST Operations Facility consists of an Operations Control Room and a Dataflow Lab.	180	73	P	5560	359	700	0	440	260		
Sesimic Upgrade - End Station A Structural Upgrade	P	The anchorage and connections between the concrete shielding blocks forming the external walls and interior experimental spaces of End Station A will be improved.	180	73	P	.	357	308	0		308		
Seismic Upgrade - End Station B Structural Upgrade	P	The anchorage and connections between the concrete shielding blocks forming the external walls and interior experimental spaces of End Station B will be improved. Strengthened anchorage for selected equipment within the building will be provided.	180	73	P	.	358	175	0		175		
PEPII RF System Grounding	P	The existing 10 PEP RF stations and their supporting electronics systems do not have a grounding system that complies in total with NFPA 70, Article 250.	170	72	HS	5330	221	155	128	27			
HVAC Upgrade SCS 1st and 2nd Floor	P	Install additional Air Handlers in Computer room (second floor) as well as the Silo room (first floor) to provide adequate cooling for the Computers, Servers and Drives.	130	70	P	5251	28	513	442		71		
Upgrade Substation 7	P	Upgrade main substation feeding B50 (support new chiller and additional UPS and computers).	130	70	P	5250	138	1153	1103	50			
Bldg 50 1st Floor Infrastructure for Water Cooled Racks Phase 1	P	Provide infrastructure for water-cooled racks for the first floor of the Computer Building.	130	70	P	.	372	178	0	178			
Additional Power to Bldg 50	P	Provide power for use in building 50 from substation 7.	130	70	P	.	383	100	0		100		
Bldg 50 1st Floor Infrastructure for Water Cooled Racks Phase II	P	Provide power and cooling for the phase II installation of water-cooled racks for the first floor of the Computer Building.	130	70	P	.	387	100	0		100		
Bldg 50 Dedicated Backup Generator	P	Provide backup generator for computing	130	70	P	.	373	400	0			200	400
Cooling Tower Chemical Huts Replacement (2 Huts)	C	Demo and replace existing chemical storage shed at two Cooling Tower locations (CT1201 and CT1202)	170	64	P	5555	233	285	85	200			

(1) CAMP Driver:
HS=Health/Safety, E=Environment, SS=Safeguards/Security, P=Programmatic
(2) Project Type: P=Programmatic, C=Conventional

Project Title	Project Type(2)	Description	Raw CAMP Score	Adjusted CAMP Score	CAMP Driver (1)	Project Number	Submit #	Current TEC	Prior Funding	Funding 06	Funding 07	FY 2008 Level Funding	FY 2008 Lab Proposed
Replace K10 Switchgear	C	Replace obsolete non-code complying K10 primary and secondary switchgear (also upgrade).	180	64	E	5645	109	1077	0	668	409		
Replace Linac VVS #1 (2 GPP and 14 SLI) (16 total at $545K each)	C	Replace first of 16 obsolete and unsafe VVS along the Klystron Gallery with new transformers equipped with vacuum switches and personnel safety interlocks. PCB-contaminated oil will be removed.	160	63	E	5427	112	561	74	487			
HVAC Building 015, Power Conversion	C	Upgrade office area HVAC	140	62	P	.	368	435	0			435	435
HVAC Upgrade Building 34	C	Replace 2 water cooled DX units with a chilled water system. This upgrade provides improved temperature control and is much more energy efficient.	140	62	P			500	0				500
Secondary Containment Upgrade for Power Supplies for PEP II	P	Seal cracks and build a system to convey liquids to separate downstream overflow tank. Regulations require a functioning secondary containment structure to be operable below transformers to catch any dielectric mineral oil which might leak.	130	61	E	5324	180	332	270	62			
Secondary Containment Upgrades:	P	Upgrade secondary containment for various transformers/oil-filled equipment on site.	130	61	E	.	46	450	0		75	75	75
Building 81 Electrical Upgrade	C	Install new service motor control center (MCC) in building 81 to replace existing old panel	120	60	P	5540	336	268	184	84			
Space Upgrades/Utilization Improvements	P	Most of the SLAC facilities and buildings were built in the 1960s and 1970s. Improvements and upgrades will be made to various buildings and facilities to better support the research	120	60	P	.	227	3500	0		1000	1000	1500
ESA/ESB Storm Drain Connections	P	This activity involves eliminating the connection of the slit drains at End Station A and End Station B to the storm drain.	120	60	E	5530	289	223	30	193			
12kv Feeder from Guest House to ROB/Kavli	C	This project will connect the Test Lab Substation to the Guest House Substation through existing manholes 61, 62 and 63 utilizing existing duct banks.	120	60	P	5640	374	353	0	353			
UPS Expansion for Bldg 050	P	Purchase and install two 500 KVA UPS for Building 50. Will provide 1MW of UPS.	110	50	P	.	337	500	0			250	500
Bldg 50 Dedicated Chillers	P	A complete dedicated chilled water system including chillers, pumping station and controls will be installed to guarantee 24/7 operation of the Computer Center.	110	50	P	.	200	1575	0		75	500	1000
Grand Total									2553	2742	2772	2460	4410

(1) CAMP Driver:
HS=Health/Safety, E=Environment, SS=Safeguards/Security, P=Programmatic
(2) Project Type: P=Programmatic, C=Conventional

Appendix 8

FY2006 Facilities Management Contract Performance Measures

Final – December 14, 2005

7.0 Projects and Facilities Management

The Contractor provides appropriate planning for, construction and management of Laboratory facilities and infrastructures required to efficiently and effectively carry out current and future S&T programs.

The sustained excellence in operating, maintaining, and renewing the Facility and Infrastructure Portfolio to meet Laboratory needs shall measure the overall effectiveness and performance of the Contractor in planning for, delivering, and operations of Laboratory facilities and equipment needed to ensure required capabilities are present to meet today's and tomorrow's complex challenges.

Each Objective within this Goal is to be assigned the appropriate numerical score by the evaluating office as described within Section I of this document. Each Objective has one or more performance measures, the outcomes of which collectively assist the evaluating office in determining the Contractor's overall performance in meeting that Objective. Each of the performance measures identifies significant tasks, activities, requirements, accomplishments, and/or milestones for which the outcomes/results are important to the success of the corresponding Objective. DOE-SC and SLAC will identify and agree to annual milestones/activities for performance measures by November 2006. ***The target identified for each performance measure, if achieved, will receive a rating of B+ (Meets Expectations).*** Higher or lower ratings will be determined as a percentage above or below the Meets Expectations rating level. Although other performance information available to the evaluating office from other sources may be used, the outcomes of performance measures identified for each Objective shall be the primary means of determining the Contractor's success in meeting an Objective. The overall Goal score is computed by multiplying numerical scores earned by the weight of each Objective, and summing them (see Table 7.1 at the end of this section). The overall score earned is then compared to Table 7.2 to determine the overall Goal letter grade.

7.1 Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage and Minimizes Life Cycle Costs

In measuring the performance of this Objective the DOE-SC evaluator(s) shall consider the following:

- The management of real property assets to maintain effective operational safety, worker health, environmental protection and compliance, property preservation, and cost effectiveness while meeting program missions, through effective facility utilization, maintenance and budget execution; and

- The maintenance and renewal of building systems, structures and components associated with the Laboratory's facility and land assets
- The management of energy use and conservation practices

The overall performance (outcomes/results) of the following set of performance measures (tasks, activities, requirements, accomplishments, and/or milestones) shall be utilized by evaluators as the primary measure of the Contractor's success in meeting this Objective and for determining the numerical score awarded. The evaluation of this Objective may also consider other tasks, activities, requirements, accomplishments, and/or milestones not otherwise identified below but that provide evidence to the effectiveness/performance of the Contractor in meeting this Objective. The weight of this Objective is 50%.

7.1a Achieve the Office of Science Maintenance Investment Index (MII) goal of 2.0% for non-waiver assets
Target – SLAC achieves the Office of Science MII goal of 2.0% in FY2006

7.1b Effective reduction of Deferred Maintenance (DM)
Target – SLAC meets DM reduction goal as stated in the Ten Year Site Plan for FY06

7.1c Efficient completion of scheduled preventive maintenance activities for conventional facilities
Target – SLAC completes 100% of scheduled preventive maintenance within 30 days

7.1d Effective execution of annual goals within the Energy Management Plan
Target – SLAC accomplishes 100% of annual goals identified and agreed to by DOE-SC and SLAC

7.2 Develop Facilities and Infrastructure Plans that Support Mission Accomplishment in a Cost-Effective Manner

In measuring the performance of this Objective the DOE-SC evaluator(s) shall consider the following:

- Integration and alignment of the Ten Year Site Plan to the Laboratory's comprehensive strategic plan;
- The facility planning, forecasting, and acquisition for effective translation of business needs into comprehensive and integrated facility site plans;
- The effectiveness in producing quality site and facility planning documents as required;
- The involvement of relevant stakeholders in all appropriate aspects of facility planning and preparation of required documentation;
- Overall responsiveness to customer mission needs; and,
- Efficiency in meeting cost and schedule performance indices for facility construction projects

The overall performance (outcomes/results) of the following set of performance measures (tasks, activities, requirements, accomplishments, and/or milestones) shall be utilized by evaluators as the primary measure of the Contractor's success in meeting this Objective and for determining the numerical score awarded. The evaluation of this Objective may also consider other tasks, activities, requirements, accomplishments, and/or milestones not otherwise identified below but that provide evidence to the effectiveness/performance of the Contractor in meeting this Objective. The weight of this Objective is 50%.

7.2a Effective integrated planning for the acquisition, utilization, maintenance, recapitalization and disposition of real property
Target – SLAC completes 100% of integrated planning milestones identified and agreed to by DOE-SC and SLAC in the areas of deferred maintenance, maintenance plan, FIMS and Rehab and Improvement Cost

Proposed Milestones:

- Identify DM Deficiencies planned for correction by fiscal year for all colors of money: SLI, GPP, direct funded maintenance, indirect funded maintenance, and the SC DM Reduction Initiative.
- Identify the maintenance portion of GPP and line item projects that a combination of improvements and maintenance.
- Establish a formal system for notifying SSO of the prioritization of all types of facility projects prior to finalizing the projects planned for accomplishment during the current fiscal year and planned for accomplishment during future fiscal years.
- Review all facility project needs to identify criteria for the planned color of money and obtain concurrence from SSO.
- Submit a draft 2006 TYSP that conforms to HQ Guidance at least one week prior to the date for submission to HQ.
- Submit the Integrated Facilities and Infrastructure Budget that conforms to Budget Guidance at least one week prior to the date for submission to HQ.
- Complete annual Condition Assessment Survey (including formal inspection reports with estimates) for all FIMS building and trailer assets scheduled for inspection during FY06.
- Complete annual Condition Assessment Survey (including formal inspection reports with estimates) for identified FIMS Other Structures and Facilities (OSF) assets scheduled for inspection during FY06.
- Establish a system for use during FY06 for identification of completed DM to support credible Quarterly Reporting of the amount of DM reduction by color of money.
- Perform reconciliation of FIMS data and MARS data acceptable to the CH Service Center based on the FIMS User's Guide.
- Host Fall Facility Managers Meeting
- Continue to develop proactive maintenance via the Maintenance Improvement Project. Develop updated Preventive Maintenance activities for 50% of all fixed cranes, 75% of all mobile cranes and 75% of all oxygen deficiency and hazardous gas detectors.
- Develop protocols for getting updated drawings into the SLAC drawing database. Put 75% of all updated facility drawings generated in FY06 into this database.
- Complete the CEF five year planning exercise. Finish 75% of all activities scheduled for FY06 by this plan.

7.2b Effective execution of the Safety and Operational Reliability Improvement (SORI) project
Target – SLAC executes the SORI project within 5% of target for cost and schedule (Cost and schedule performance indices is within -5% or positive variance)

7.2c Effective execution of facility and infrastructure projects greater than $250K
Target – SLAC executes facility and infrastructure project (General Plant and Operating projects) within 5% of target for cost and schedule (Cost and schedule performance indices is -5% or positive variance) To calculate the final rating for this performance measure, the cost and schedule indices for each project in this measure will be multiplied by a weighted factor based on their Total Project Cost and the Total Budget for all projects. The final rating will be the sum of the weighted cost and schedule indices.

Appendix 9

Proposed FY2007 Facilities Management Contract Performance Measures

MII

SLAC will propose an alternative maintenance funding plan in July 2006 which takes into consideration its high value/low maintenance facilities.

ACI

SLAC will propose a target for ACI in July 2006. (The high value/low maintenance facilities study will result in a lower RPV.)

Space Management

The Conventional & Experimental Facilities Dept. will survey all its existing storage space, send unneeded items to surplus and consolidate the remaining items to increase the efficiency of storage space at SLAC.

Efficient Use of Maintenance Funds

The recently approved Computerized Maintenance Management Software (CMMS) system will be installed and begin to be populated with equipment data and preventive maintenance schedules. Ultimately, this will allow the Laboratory to better understand and track maintenance activities down to a very detailed level allowing more preventive and less reactive maintenance with a corresponding better use of maintenance funds. This is a multiyear project but the goals for the first year as set forth in the CMMS proposal will be met.

FIMS Validation

Conduct an internal validation of the 23 data elements required by the Federal Real Property Council (FRPC) in accordance with the FIMS Validation Guidance.